



# RD-JT20 / RD-JT21 SERVICE MANUAL



## Caution

Be sure to read this manual before servicing. To assure safety from fire, electric shock, injury, harmful radiation and materials, various measures are provided in this Acer DLP projector. Be sure to read cautionary items described in the manual to maintain safety before servicing.

## Service Warning

1. When replace the lamp, to avoid burns to yor fingers. The lamp becomes too hot.
2. Never touch the lamp bulbwith a finger or anything else. Never drop it or give it a shock. They may cause bursting of the bulb.
3. This projector is provided with a high voltage circuit for the lamp. Do not touch the electric parts of powerer unit (main), when turn on the pojector.
4. Do not touch the exhaust fan, during operation.

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**SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT.**

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**1. Specifications****A. Projector Specifications****Technical Specifications**

Note: All specifications are subject to change without notice.

**General**

|               |                    |                  |
|---------------|--------------------|------------------|
| Product name: | Personal Projector |                  |
| Model name:   | RD-JT20 (X-XGA)    | 1024X768 dpi XGA |
|               | RD-JT21 (S-SVGA)   | 800X600 dpi SVGA |

**Optical**

|                |                               |
|----------------|-------------------------------|
| Display system | 1-CHIP DMD                    |
| Lens F/Number  | F/2.6 Focal Length: F = 36 mm |
| Lamp           | 120W VIP lamp                 |

**Electrical**

|                   |  |
|-------------------|--|
| Power supply      | AC100 ~ 240V, 2.3A, 50/60 Hz (Automatic) |
| Power consumption | 185 W (Max)                              |

**Mechanical**

|                             |                                     |
|-----------------------------|-------------------------------------|
| Dimensions                  | 220 mm (W) x 52 mm (H) x 175 mm (D) |
| Operating temperature range | 10 • ~ 40 •                         |
| Weight                      | 3.85 lbs (1.69kg)                   |

**Input terminal**

|                               |                         |
|-------------------------------|-------------------------|
| Computer Input                |                         |
| RGB input                     | D-sub 15-pin (female)   |
| Video Signal Input            |                         |
| S VIDEO                       | Mini DIM 4-pin terminal |
| VIDEO                         | RCA Jack terminal       |
| Audio Signal Input            |                         |
| Mini Jack Mono Audio Terminal |                         |

**Output**

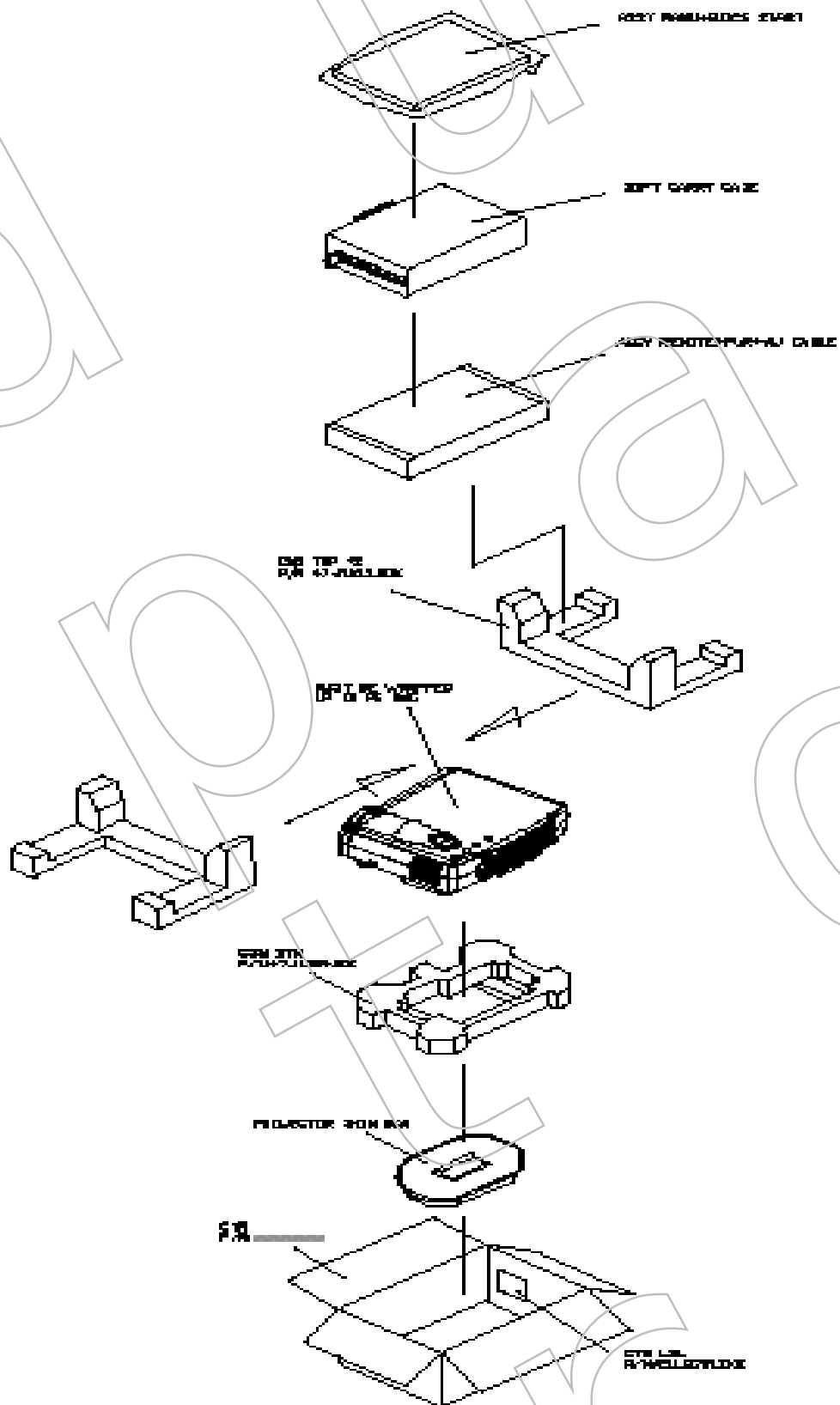
1 Watt speaker x 1

## B. Timing Chart

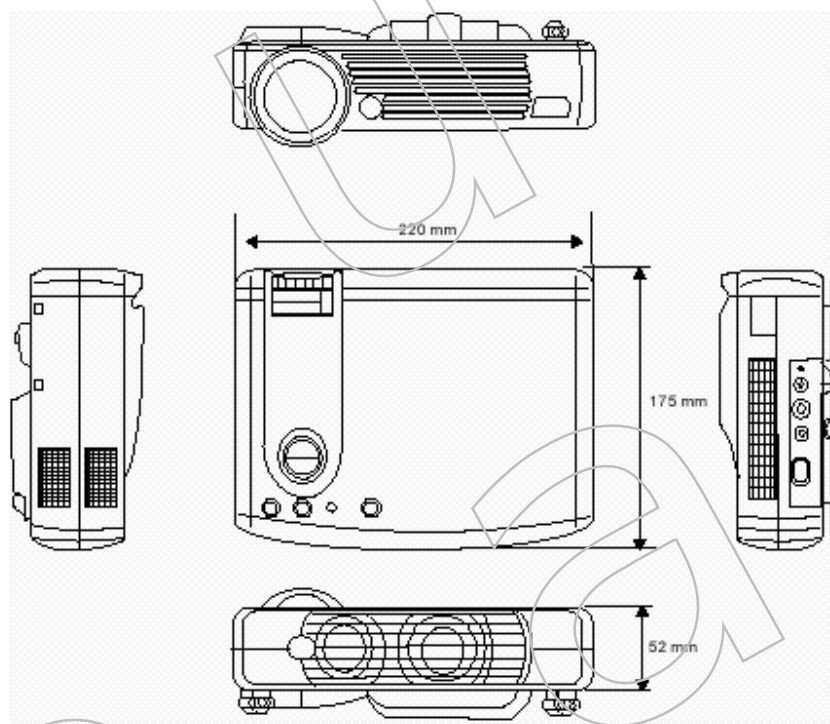
| Resolution | H Sync (kHz) | V Sync (Hz) | Remark    |
|------------|--------------|-------------|-----------|
| 640x350    | 31.5         | 70.1        |           |
| 640x400    | 37.9         | 85.1        | VESA      |
| 720x400    | 31.5         | 70.0        |           |
| 720x400    | 37.9         | 85.1        | VESA      |
| 640x480    | 31.5         | 60.0        | VESA      |
| 640x480    | 37.9         | 72.8        | VESA      |
| 640x480    | 35.0         | 66.7        | Macintosh |
| 640x480    | 43.3         | 85.0        | VESA      |
| 800x600    | 35.2         | 56.3        | VESA      |
| 800x600    | 37.9         | 60.3        | VESA      |
| 800x600    | 46.9         | 75.0        | VESA      |
| 800x600    | 48.1         | 72.2        | VESA      |
| 800x600    | 53.7         | 85.1        | VESA      |
| 832x624    | 49.7         | 74.5        | Macintosh |
| 1024x768   | 48.4         | 60.0        | VESA      |
| 1024x768   | 56.5         | 70.1        | VESA      |
| 1024x768   | 60.0         | 75.0        | VESA      |
| 1024x768   | 68.7         | 85.0        | VESA      |
| 1280x1024  | 64.0         | 60.0        | VESA      |

## 2. Packaging Description

## 2.1 Projector Packaging

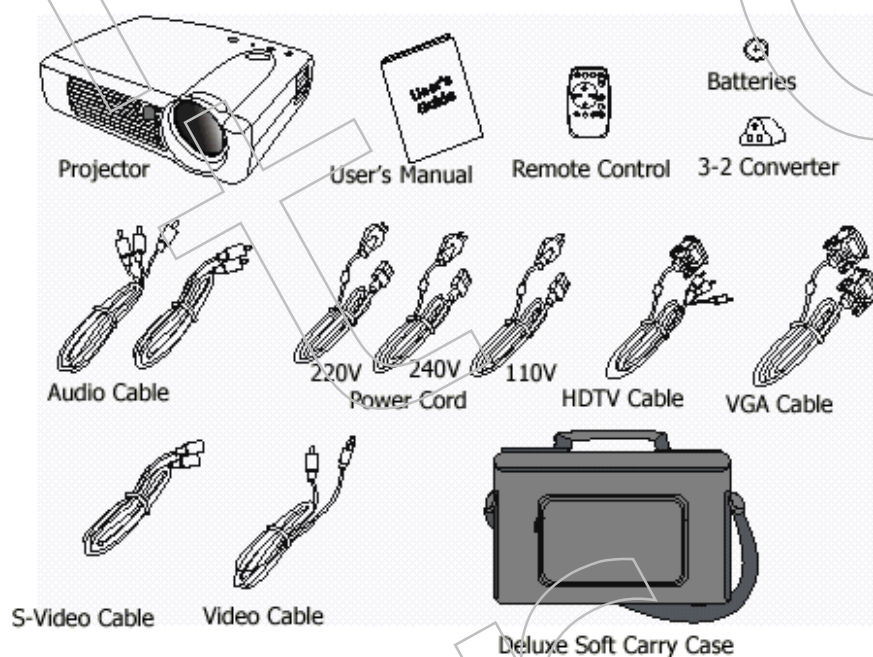


## 2.2 Dimensions

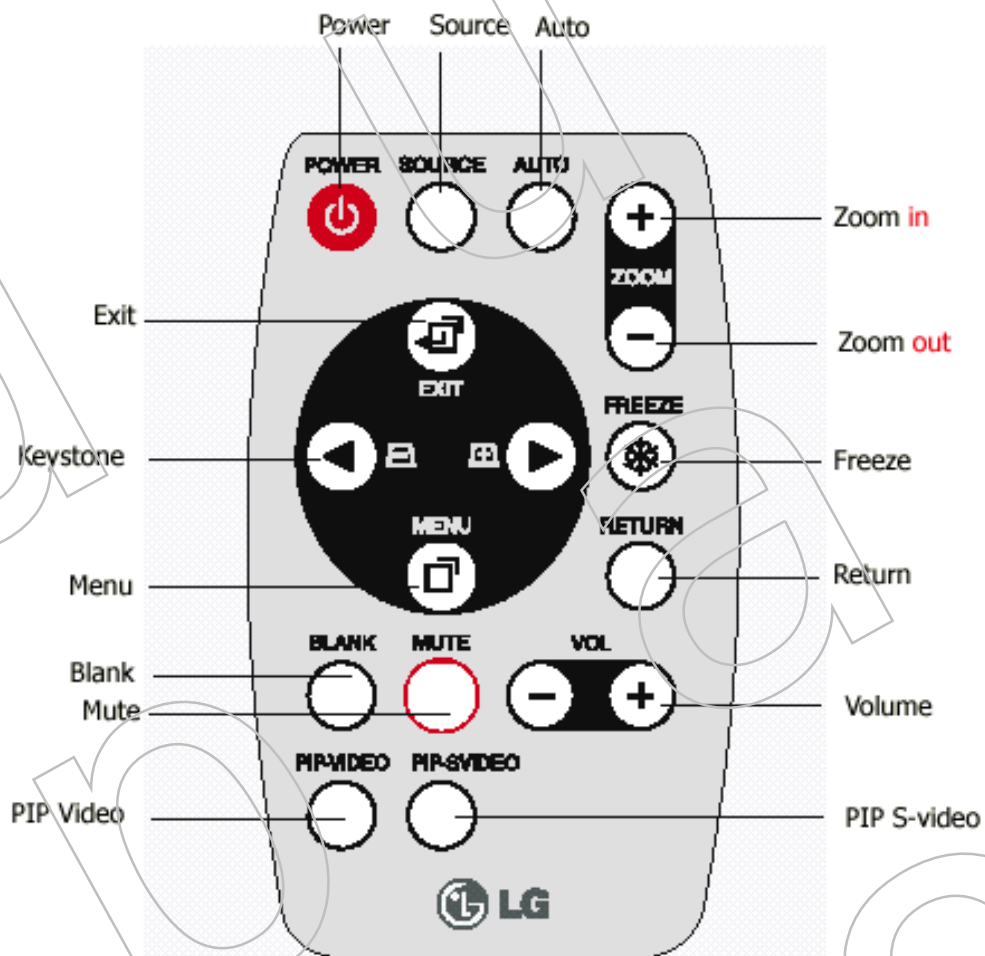


## 2.3 Shipping Contents

The LG RD-JT20/RD-JT21 Series Projector is shipped with the necessary cables required for standard PC, Macintosh or laptop computer connections. Carefully unpack and verify that you have all the items shown below. If any of these items are missing, please contact your place of purchase.



### 3. Remote Control Description



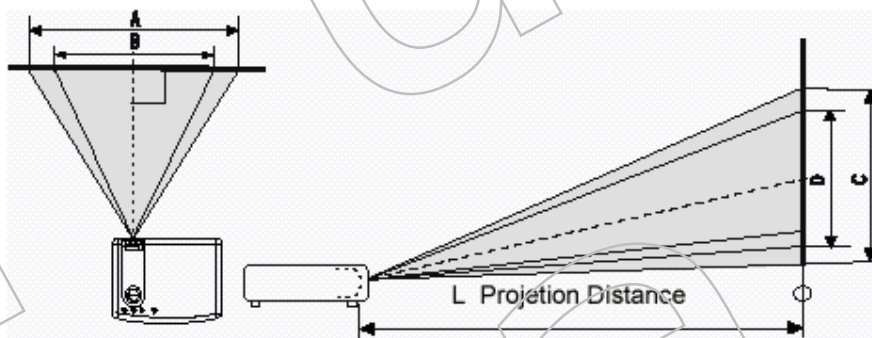
#### Remote Control Features

The remote control sensors are located in the front/back of the projector.  
The distance between the sensor and the remote control should not exceed 6 meters.

## 4. Installation

### 4.1 Screen Size

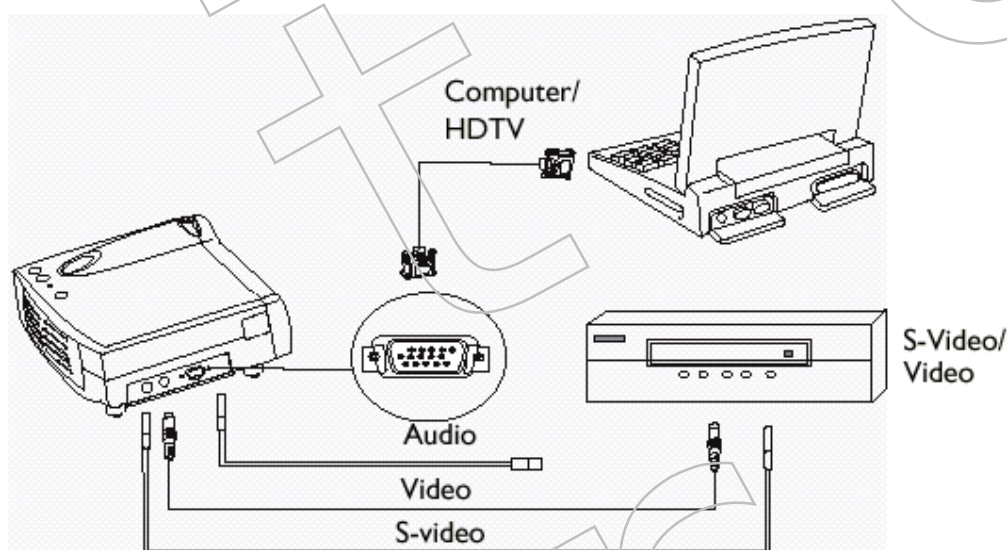
Place the projector at the required distance from the screen according to the desired picture size (see the table below).



| Screen Size (Max.) |               |                | L. Projection distance (cm) | Screen Size (Min.) |               |                |
|--------------------|---------------|----------------|-----------------------------|--------------------|---------------|----------------|
| Diagonal (in)      | A. Width (cm) | C. Height (cm) |                             | Diagonal (in)      | B. Width (cm) | D. Height (cm) |
| 30.4               | 61.8          | 46.3           | 100                         | 24.9               | 50.7          | 38.0           |
| 60.8               | 123.7         | 92.7           | 200                         | 49.9               | 101.3         | 76.0           |
| 91.2               | 185.3         | 138.9          | 300                         | 74.7               | 151.9         | 113.9          |
| 121.5              | 247.0         | 185.2          | 400                         | 99.7               | 202.5         | 151.9          |
| 151.9              | 308.7         | 231.6          | 500                         | 124.6              | 253.2         | 189.9          |
| 182.3              | 370.5         | 277.9          | 600                         | 149.5              | 303.8         | 227.9          |
| 212.8              | 432.2         | 324.2          | 700                         | 174.6              | 354.4         | 266.2          |
| 243.1              | 494.0         | 370.5          | 800                         | 199.4              | 405.1         | 303.8          |
| 273.5              | 555.7         | 416.7          | 900                         | 224.3              | 455.7         | 341.8          |
| 303.9              | 617.5         | 463.1          | 1000                        | 249.2              | 506.3         | 379.8          |

### 4.2 Connecting to Various Equipment

It only takes a few seconds to connect your RD-JT20/RD-JT21 Series projector to your computer/notebook, VCR or other systems. However, a Mac adapter (an optional accessory) is needed for connection for Macintosh users.

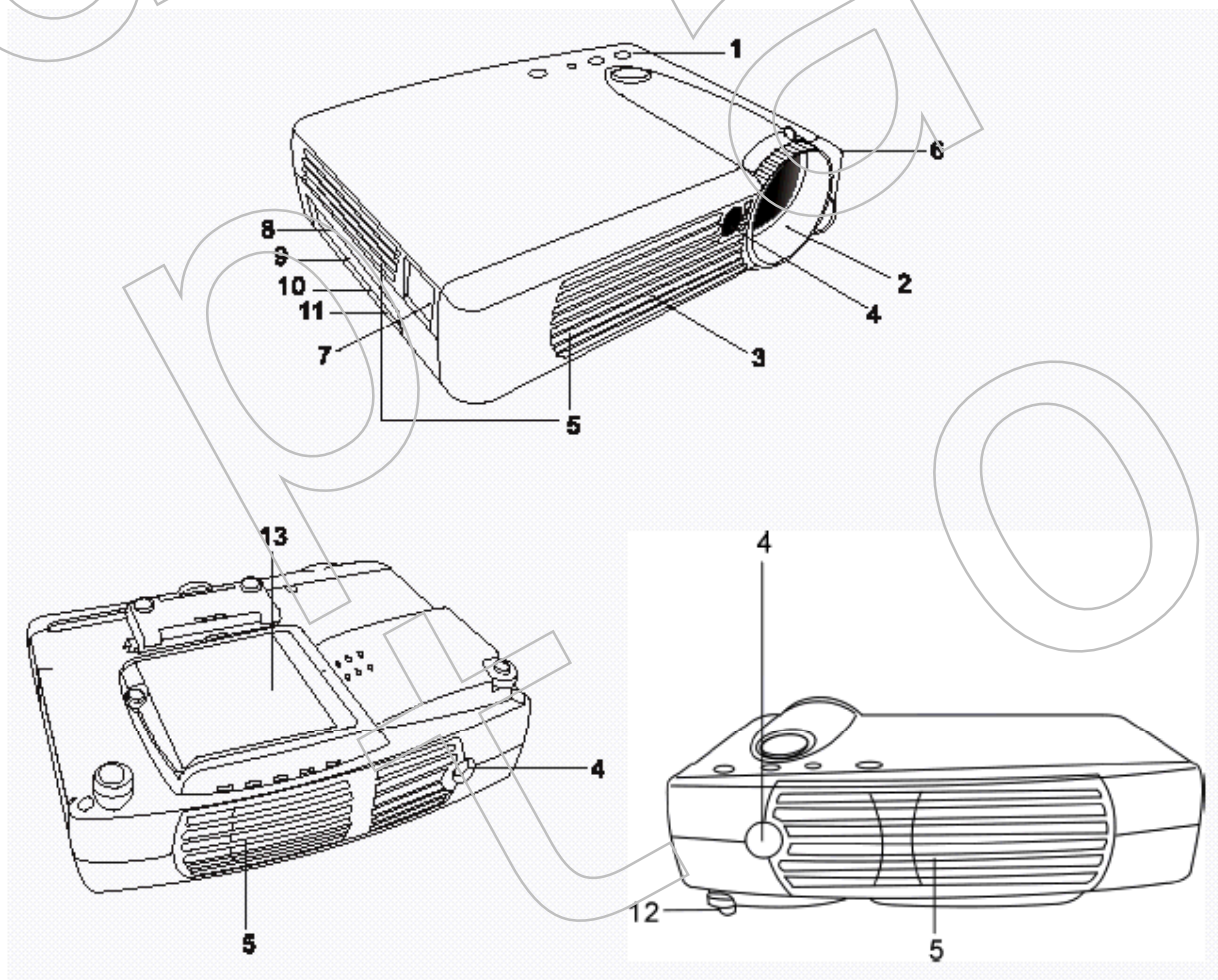


## 5. Projector Description

### 5.1 Product Description

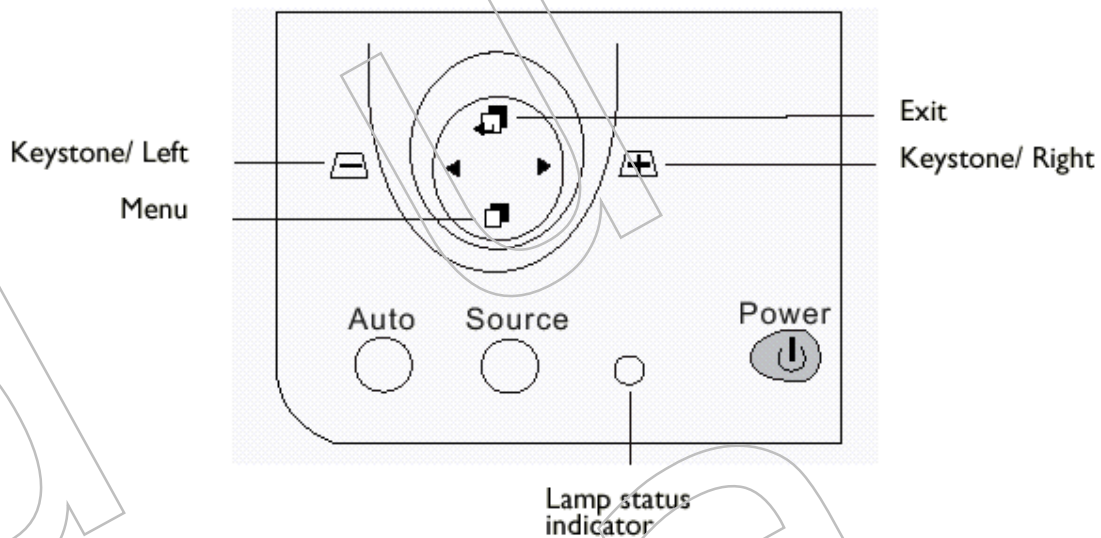
#### 5.1.1 Projector

- |  |  |
|--|--|
| <ul style="list-style-type: none"><li>1. External control pane</li><li>2. Projection lens</li><li>3. Front adjustment feet</li><li>4. IR remote sensor</li><li>5. Ventilation grill</li><li>6. Kensington lock</li><li>7. AC power cord input</li><li>8. S-video connector</li></ul> | <ul style="list-style-type: none"><li>9. RCA connector</li><li>10. D-sub connector<br/>(for computer/HDTV input)</li><li>11. Audio input</li><li>12. Rear adjustment feet</li><li>13. Lamp access door<br/>(underneath unit)</li></ul> |
|--|--|





### 5.1.2 External Control Panel

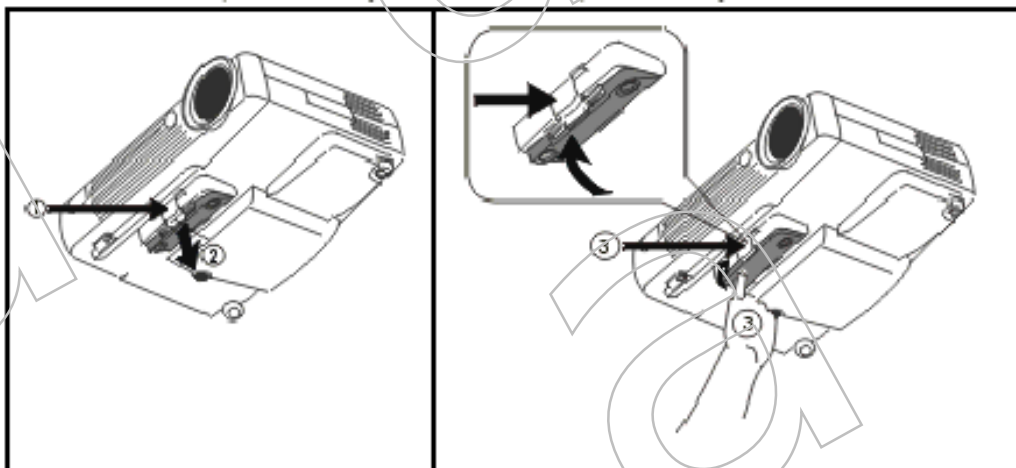


- The **Infrared Remote Receiver (Front and Rear)** allows the projector to accept signals from the remote control. For best results, be sure to aim the control toward the sensor without any obstructions between the two, and at a distance no greater than 6 meters.
- **Menu** will display the menu system on screen. Press **Menu** again to access the sub-menus. **Left** and **Right** help you navigate among choices and settings in the menus and sub-menus. However, when the onscreen menu is not activated, the **Left** and **Right** buttons will function as **Keystone +/-** hot keys.
- Press the **Exit** button to go back to the main menu. Press **Exit** again to leave the menu system.
- The **Status Indicator** will blink or light up when the lamp needs service, cooling or replacement.
- When the projector is on, **Back-lit Power** will blink during warm-up and turn to solid green to indicate the projector is ready for use.
- Press **Power** for 1 second to turn the projector on or press power key twice to turn off the projector.
- **Auto** key: Automatically sense the best picture quality for current received signals.
- **Source** key: Select signal sources, PC, YPbPr, Video, S-Video.

### 5.1.3 Adjuster

There is one adjuster at the bottom of the projector. It raises up the projector when the projected image is offset vertically.

1. Lift the projector up and press the adjuster button to release the adjuster.
2. The adjuster will drop into position and be locked.
3. Remember to press the adjuster button and push the adjuster back to as it was.



### 5.1.4 Projector Features

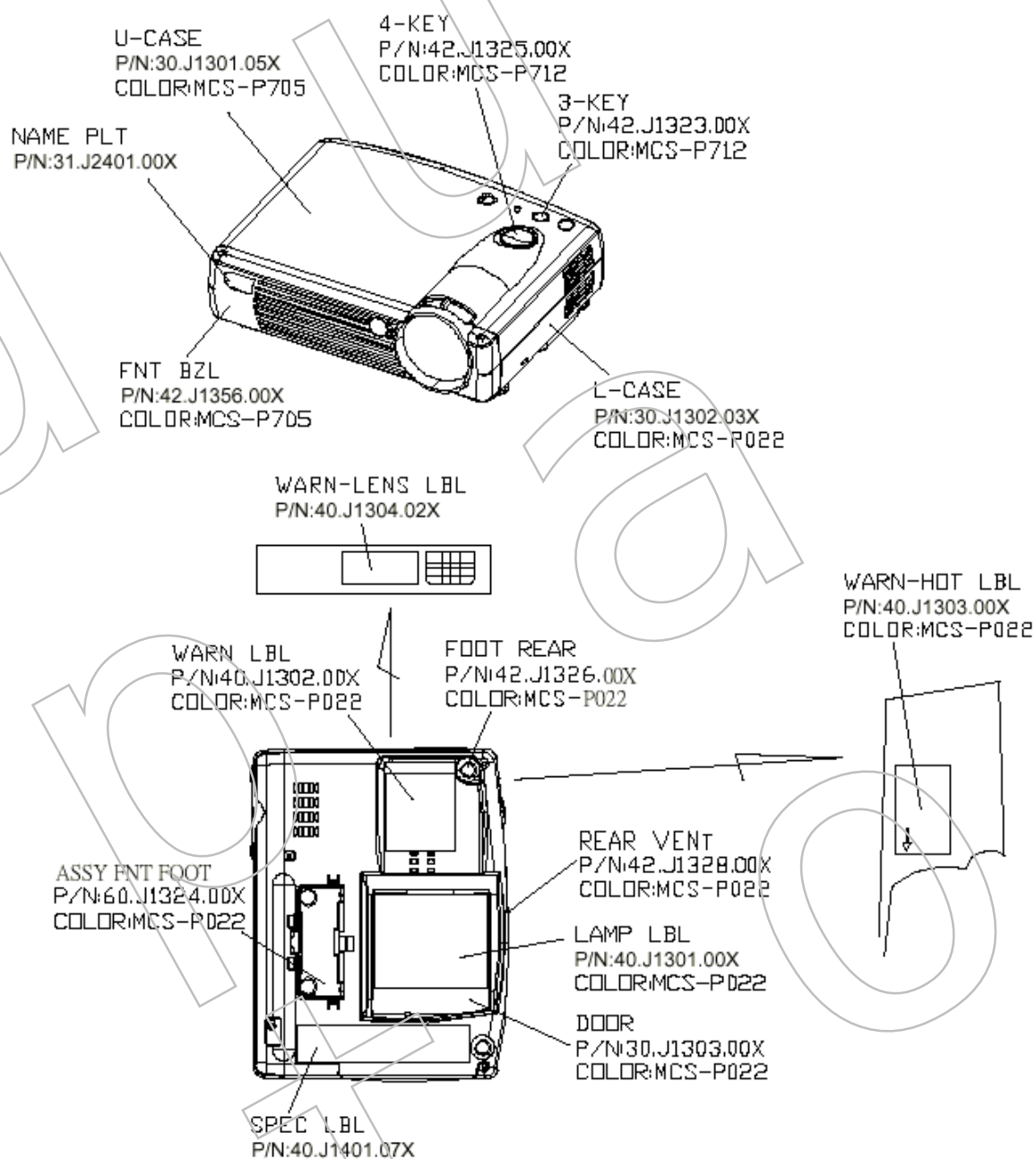
The RD-JT20/RD-JT21 Series Projector integrates high performance optical engine projection and user-friendly design to deliver high reliability and better experience.

The RD-JT20/RD-JT21 Series Projector offers the following features:

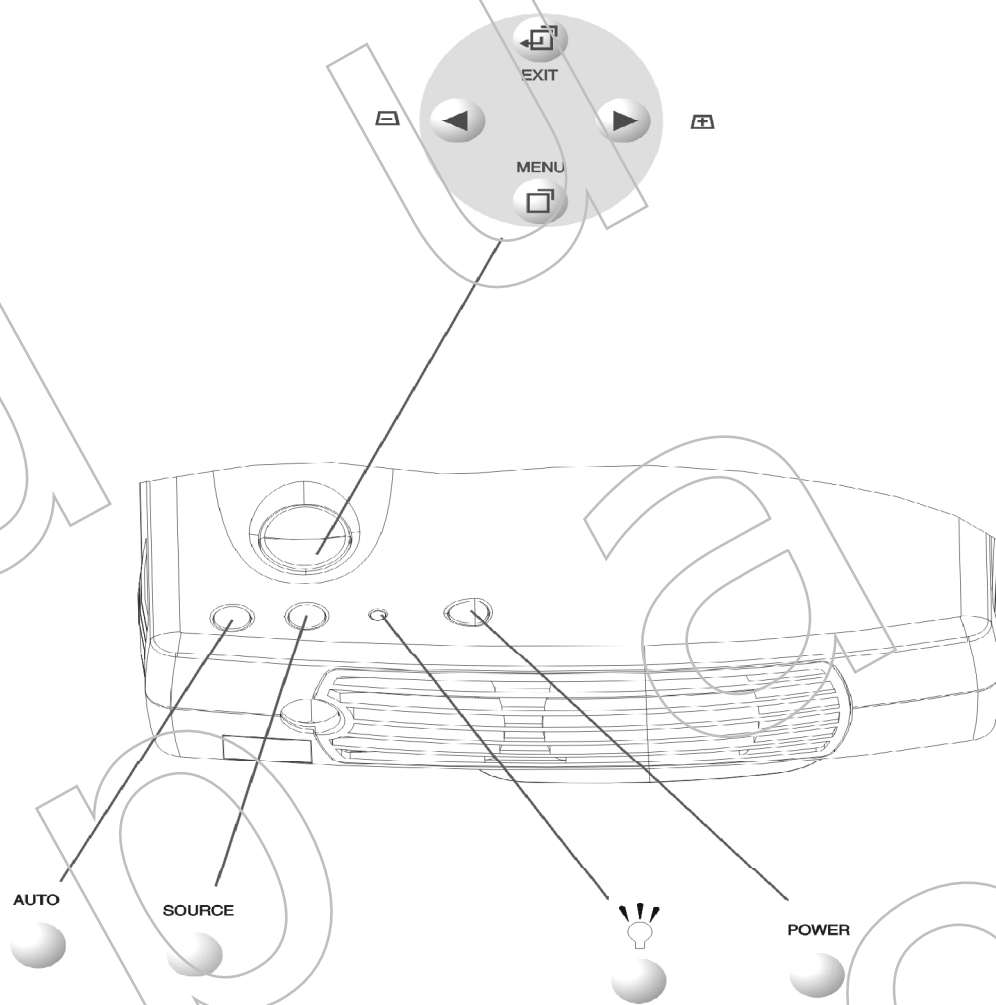
- One key auto-adjustment to display the best picture quality
- Easy digital keystone correction through hot keys to correct tilted pictures
- Powerful AV function to provide high AV picture results.
- Compact and portable unit
- Full-function remote control
- Easy to set up and use
- One screen menus in 7 languages: English, French, German, Italian, Spanish, Portuguese, and Traditional Chinese.
- Adjustable color balance control for data/video
- Ultra-high brightness projection lamp
- Ability to display high quality 16.7 million colors
- Powerful AV function to provide high AV picture results.
- HDTV compatibility (YPbPr)

**Note: The brightness of your machine will vary depending on the ambient room conditions and contrast/brightness settings.**

## 5.2 Product Appearance



### 5.3 Local keyboard & function Description



#### Power Key

Type: Push button, no repeat

Description: When the projector is in power-off status, press this key for more than 1 second to power on the projector. Under normal operation condition, press this key for more than 1 second enter power off layer, then press this key again to turn down the power (besides CPU's) and standby the projector.

---

#### Menu Key

Type: Push button, no repeat

Description: There are two conditions to press this button,  
1). The OSD menu is not popped up. To press this button will pop up the OSD menu and start the OSD user control function.  
2). The OSD menu has already been popped up. To press this button will enter into the functional item level under the page icon group, as user push the button again, that will activate the selected item.

---

### Exit Key

Type: Push button, no repeat

Description: There are three conditions to press this button:

- 1). The OSD menu is not popped up. To press this key is not functional.
  - 2). The OSD menu is in the page icon group, press this key then the OSD menu will be closed.
  - 3). The OSD menu is in the functional item level, press this key then the OSD menu will be back to the page icon group & save the function's value to EEPROM.
- 

### + / → Key

Type: Push button, repeat

Description: There are two conditions to press this button:

- 1). The OSD menu is not popped up. This is the hot key of Keystone function.
  - 2). The OSD menu has already been popped up:
    - If the page icon group is activated, press the “→ Key” will select rightly to another page icon. If the activating page icon is the most right icon, push the button will select to the most left control icon.
    - If the gauge type item is activated, push the “→ key” will increase the value of the gauge, if the value reach to its maximum, To press this button continuously will not have any response. If the set value/execute type item, the key type is “no repeat”, push the “→ key” will toggle the right sub-item function.
- 

### - / ← Key

Type: Push button, no repeat

Description: 1). The OSD menu is not popped up. This is the hot key of Keystone function..

- 2). The OSD menu has already been popped up:
    - If the page icon group is activated, press the “← Key” will select left to another page icon. If the activating page icon is the most left icon, push the button will select to the most right control icon.
    - If the gauge type item is activated, the key type is “repeat”, push the “← key” will decrease the value of the gauge, if the value reach to its minimum, to press this button continuously will not have any response. If the set value/execute type item, the key type is “no repeat”, push the “← key” will toggle the left sub-item function.
-

### Auto Key

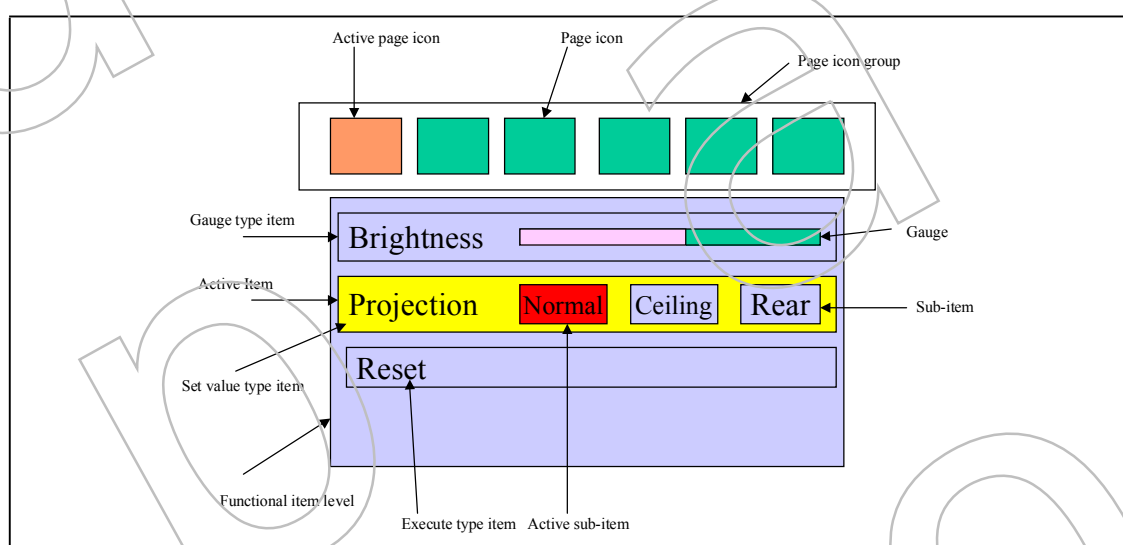
Type: Push button, no repeat

Description: Execute "Auto" function to make the graphic mode to re-adjust H-Size, H-Phase, H-Position and V-Position immediately and the video mode to re-detect the system standard.

### Source Key (Computer, YPbPr, Video, S-Video)

Type: Push button, no repeat

Description: Press Source key to display the current source information, press again to Force net Source, Source cycle are PC, YPbPr, Video, S-Video.

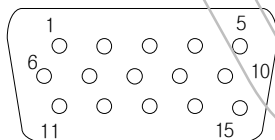


### 5.4 TV Video Input

1. S-Video
2. RCA

## 5.5 VGA Video Input

15pin mini D-sub connector is on the captive signal cable for IBM VGA, 8514A or compatible graphics adapters. The pin assignments of this connector are as the following:



**\*\*15 pin definition of the mini D-sub male for DDC1/2B protocol**

- |     |                                   |
|-----|-----------------------------------|
| 1.  | Red video (HDTV-Pr)               |
| 2.  | Green Video (HDTV-Y)              |
| 3.  | Blue Video (HDTV-Pb)              |
| 4.  | Monitor ID bit 2                  |
| 5.  | Return                            |
| 6.  | Red Video Return                  |
| 7.  | Green Video Return                |
| 8.  | Blue Video Return                 |
| 9.  | +5 Volt Supply (Mandatory Supply) |
| 10. | Sync. Return                      |
| 11. | Monitor ID bit 0                  |
| 12. | Bi-directional data (SDA)         |
| 13. | Horizontal Sync                   |
| 14. | Vertical Sync                     |
| 15. | Data clock (SCL)                  |

## 5.6 External Power status indicator

### 5.6.1 Standby/On LED indicator

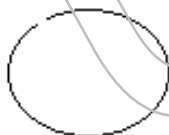
Power LED indicator: (Blue/Orange)

*Orange*

*Green*



*Lamp*



*Power*

| Operation Status                          | Power Indicator |
|---|-----------------|
| 1. Standby                                | Solid green     |
| 2. Heating process after powered on       | Blinking green  |
| 3. Power on and stable status             | Solid green     |
| 4. Powered off and during cooling process | Blinking green  |

1. Power off : Press Power button for 1 second to turn off the lamp. The LED will then blink green and the lamp shuts down, but the fan will still work for 1 minute to cool down the lamp. Meanwhile, it's prohibited to turn on the unit during the 1-minute cooling procedure. After that 1-minute cooling down procedure, the LED will light solid green and the fan stops. (Note: "Lamp Protection Procedure": If user tries to turn on the lamp again during the cool down procedure, the projector will ignore the command until cool down procedure is finished).
2. When user presses Power button, following message will be displayed to make sure user really want to power off the unit:
  - ◆ Are you sure to power off?
  - ◆ Press "power" again to power off.

### 5.6.2 Lamp/temperature status LED indicator

1. Lamp Exceed service hours: When this LED lights **Orange** continuously, the lamp usage has exceeded (\*1500) service hours. After this symptom appears, it is advisable to replace the projection lamp as soon as possible.
  - "CHANGE THE LAMP AND RESET THE LAMP TIMER." message will be displayed on the screen if the lamp has operated for (\*1400) hours. See figure 1
  - "YOU HAVE TO CHANGE THE LAMP" message will be displayed on the screen if the lamp has operated for (\*1479) hours.
  - "CHANGE THE LAMP" message will blink on the screen together with the sold Orange LED if the lamp has operated for more than (\*1500) hours. See figure 3. The warning message will be displayed when the projector is turned on (last for 30 seconds), 5 minute after turning on (last for 30 seconds) and 10 minutes after turning on (last for 30 seconds). After 10 minutes after turning on, the projector will shut down and following message will be shown:
    - Out of lamp usage time



- Power off to protect projector

The message will last for 5 seconds before going off.

### Lamp replacing warning message

Figure 1



Figure 2



Figure 3



Lamp is not well attached: If the LED blinks, it indicated that the lamp is not attached properly.

2. Temperature is too high: If the projector's internal temperature is too hot to operate safely, the LED will blink for one minute and then the lamp will go off automatically.
3. Normal status: If the LED light is off, it means the lamp and temperature inside the projector is under normal situation.

## 5.7 Power Supply requirement

### 5.7.1 Input Power Requirement

- Input Voltage Range  
The unit shall meet all the operating requirements with the range 100-240 VAC
- Frequency Range  
The unit shall meet all the operating requirements with an input frequency range 50 Hz ~ 60 Hz
- Power Consumption  
Typical power consumption 170 W
- Inrush Current  
Power supply inrush current shall be less than the ratings of its critical components (including power switch•fuse•rectifier•and surge limiting device) for all conditions of line voltage.
- Regulation Efficiency  
80 % (typical) measuring at 115Vac and full load

### 5.7.2 Output Power Requirement

The power supply can provide DC output as below•

| NO. | Voltage | Regulation | Load Current Range | Ripple & Noise |
|-----|---------|------------|--------------------|----------------|
| 1   | +5 V    | + - 5 %    | 0.5 A ~ 1.0 A      | 100 mV         |
| 2   | +5 V    | + - 5 %    | 0.05 A ~ 0.15 A    | 50 mV          |
| 3   | +12 V   | + - 5 %    | 0.2 A ~ 0.6 A      | 150 mV         |
| 4   | +12 V   | + - 5 %    | 0.3 A ~ 0.5 A      | 200 mV         |
| 5   | +3.3 V  | + - 5 %    | 0.5 A ~ 1.5 A      | 50 mV          |

### 5.7.3 Lamp Power specifications

- Applicable Lamp  
120W Short-Arc VIP R 120/P16 Lamp, AC operation
- Lamp Voltage  
78 (+22/-13)V (Initial dispersion condition of Lamp)
- Starting pulse from Igniter  
Pulse voltage

### 5.7.4 Power Standby mode

Set power standby mode total power consumption < 15 W

### 5.7.5 Power good signal

Active high after 5 Volt reach 95% of its rating and goes to logic low at least 0.5ms before power falls to 90% of its rating. This Power Good Signal is not provide by the Osram PWR.

## 5.8 Characteristics of input/outputs

| Signal                  | Parameter                         | Min | Typical | Max |                          |
|-------------------------|-----------------------------------|-----|---------|-----|--------------------------|
| LINE,<br>NEUTRAL        | Main voltage                      | 88  |         | 264 | Volt rms                 |
|                         | Input power                       |     | 255     |     | Watt                     |
|                         | Standby power                     |     |         | 7   | Watt                     |
| RDATA<br>GDATA<br>BDATA | Impedance                         |     | 75      |     | Ohm                      |
|                         | Amplitude                         |     | 0.7     |     | Volts peak-to-peak       |
|                         | Black pedestal                    |     | 0       |     | Volts                    |
|                         | Bandwidth                         |     | 140     |     | M Hz                     |
|                         | Transfer char. (gamma)            |     | TBD     |     |                          |
|                         | Cross-talk RDATA,<br>GDATA, BDATA |     |         | -45 | DB                       |
| GDATA_SOG               | Impedance                         |     | 75      |     | Ohm                      |
|                         | Amplitude                         |     | 1       |     | Volts peak-to-peak       |
|                         | Video amplitude                   |     | 0.7     |     | Volts peak-to-peak       |
|                         | Sync amplitude                    |     | 0.3     |     | Volts peak-to-peak       |
|                         | Black pedestal                    |     | 0       |     | Volts                    |
|                         | Bandwidth                         |     | 140     |     | M Hz                     |
|                         | Transfer char. (gamma)            |     | TBD     |     |                          |
|                         | Cross-talk RDATA,<br>GDATA, BDATA |     |         | -45 | DB                       |
| HDATA                   | Impedance                         |     | 1       |     | K ohm                    |
|                         | Amplitude, low level              | 0   |         | 0.8 | Volt                     |
|                         | Amplitude, high level             | 2.5 |         | 5   | Volt                     |
|                         | Frequency                         | 24  |         | 100 | K Hz                     |
| VDATA                   | Impedance                         |     | 1       |     | K ohm                    |
|                         | Amplitude, low level              | 0   |         | 0.8 | Volt                     |
|                         | Amplitude, high level             | 2.5 |         | 5   | Volt                     |
|                         | Frequency                         | 48  |         | 120 | Hz                       |
| SDATATA                 | Impedance                         |     | TBD     |     |                          |
|                         | Amplitude, low level              | 0   |         | 0.8 | Volt                     |
|                         | Amplitude, high level             | 2.5 |         | 5   | Volt                     |
|                         | Wave forms, timing                |     |         |     | According to I2C spec.   |
| SCLDATA                 | Impedance                         |     | TBD     |     |                          |
|                         | Amplitude, low level              | 0   |         | 0.8 | Volt                     |
|                         | Amplitude, high level             | 2.5 |         | 5   | Volt                     |
|                         | Wave forms, timing                |     |         |     | According to I2C spec.   |
| RXD                     | Impedance                         |     | TBD     |     |                          |
|                         | Amplitude                         | -25 |         | 25  | Volt                     |
|                         | Wave forms, timing                |     |         |     | According to RS232 spec. |
| TXD                     | Impedance                         |     | TBD     |     |                          |
|                         | Amplitude                         | -25 |         | 25  | Volt                     |
|                         | Wave forms, timing                |     |         |     | According to RS232 spec. |

## 5.9 Timing

The PC signal timing is as following:

| Standard          | 640x400<br>at 70Hz | 640x480<br>at 60Hz | 640x480<br>at 72Hz | 640x480<br>at 85Hz | 800x600<br>at 60Hz | 800x600<br>at 72Hz | 800x600<br>at 75Hz |
|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Standard Type     | DOS                | Industry           | VESA               | VESA               | VESA               | VESA               | VESA               |
| Resolution H*V    | 640x400            | 640x480            | 640x480            | 640x480            | 800x600            | 800x600            | 800x600            |
| Polarity H/V      | -/+                | -/-                | -/-                | -/-                | +/+                | +/+                | +/+                |
| H Frequency (KHz) | 31.47              | 31.469             | 37.861             | 43.269             | 37.879             | 48.077             | 46.875             |
| V Frequency (Hz)  | 70.08              | 59.94              | 72.809             | 85.008             | 60.317             | 72.188             | 75                 |
| Pixel Clock (MHz) | 28.32              | 25.175             | 31.5               | 36                 | 40                 | 50                 | 49.5               |

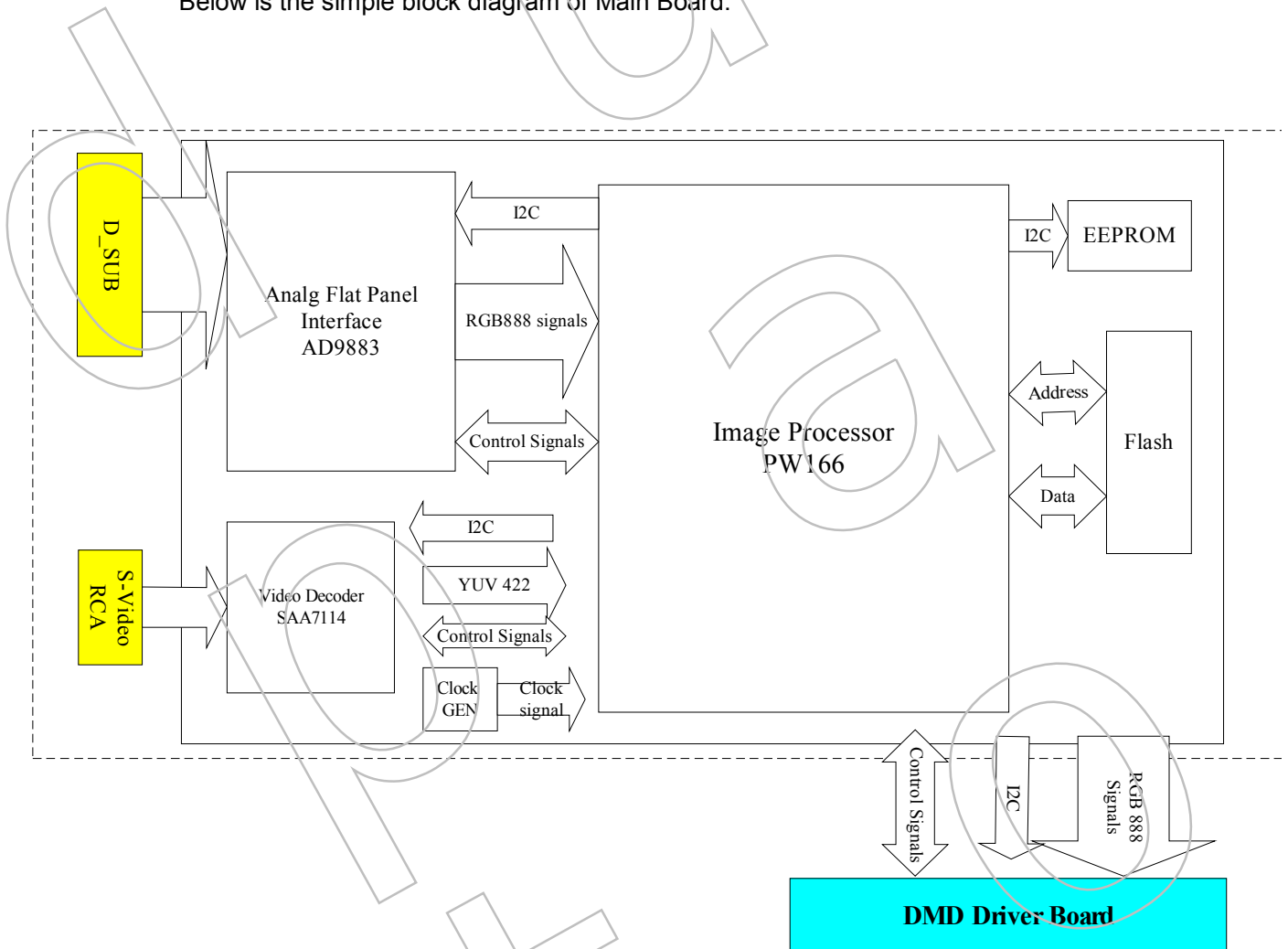
| Standard          | 800x600<br>at 85Hz | 832x624<br>at 74Hz | 1024x768<br>at 43.5Hz<br>(Interlace) | 1024x768<br>at 60 Hz | 1024x768<br>at 70Hz | 1024x768<br>at 75Hz | 1024x768<br>at 85Hz |
|-------------------|--------------------|--------------------|--------------------------------------|----------------------|---------------------|---------------------|---------------------|
| Standard Type     | VESA               | Macintosh          | VESA                                 | VESA                 | VESA                | VESA                | VESA                |
| Resolution H*V    | 800x600            | 832x624            | 1024x768                             | 1024x768             | 1024x768            | 1024x768            | 1024x768            |
| Polarity H/V      | +/+                | -/-                | +/+                                  | -/-                  | -/-                 | +/+                 | +/+                 |
| H Frequency (KHz) | 53.67              | 49.72              | 35.5                                 | 48.4                 | 56.476              | 60.023              | 68.677              |
| V Frequency (Hz)  | 85.06              | 74.55              | 43.5                                 | 60.0                 | 70.069              | 75.029              | 84.997              |
| Pixel Clock (MHz) | 56.25              | 57.29              | 44.9                                 | 65                   | 75                  | 78.75               | 94.5                |

## 6. Circuit Operation Theory

### Block Diagram

#### A. Main Board

Below is the simple block diagram of Main Board.



As the diagram shown above, here is the function of every discrete block.

#### ■ D\_SUB input

Analog RGB data input, the standard maximum analog input resolution is SXGA.

There also some interface signals from the VGA cable, they are:

**ADHSYNC** – Providing the Horizontal Synchronization signal to AD9883.

**ADVSYNC** – Providing the Vertical Synchronization signal to AD9883

**DDC interface** – Providing Digital Display Channel, which include VCC (Pin9), SCL (Pin15), SDA (Pin12).

#### ■ Analog Flat Panel Interface (ADC Converter), AD9883

The ADC converter digitizes the input analog RGB data signal from D\_SUB and output the digital data streams to Image Processor.

The normal voltage level of analog RGB input signals is about 0.7V, while the ADC digital signal output to Image Processor is LVTTTL level, about 3.3V.

The ADC, AD9883 could supports up to pixel rate at about 140MHZ, which is about SXGA 75HZ analog input signal.

There are some other interface signals related to AD9883

**SOGIN** – Sync On Green input from Image Processor, the signal enable the RD-JT20/RD-JT21 support the very special VGA input signal.

**GCOAST** – Input signal from Image Processor, the signal enable the RD-JT20/RD-JT21 support the Macintosh analog input format.

**GCLK** – Output to Image Processor as Pixel Clock, providing the reference clock for Image Processor.

**GHS** – Providing the Horizontal Synchronization signal to Image Processor.

**GVS** – Providing the Vertical Synchronization signal to Image Processor.

**GRE,GGE,GBE** – Digital data stream to Image Processor which is higher than SXGA 75Hz.

♦ Image Processor (PW166)

The most important IC is the image Processor, here below list its main function

- Supporting input digital data stream up to UVGA and output digital data up to SXGA
- Two input port, which are Graphic port (VGA format) and Video port (video decoder format).
- Frame rate conversion, the output frame rate is independent from the input frame rate and the most important feature of the Image Processor is memory inside, there is no need of external memory for frame rate conversion.
- Up and Down scaling of different input resolution, ensure the same output image size.
- Providing Bitmap OSD picture, which if more fancy than normal OSD chip.
- On chip Microprocessor.

The Image Processor is a highly integrated circuit, it include MCU, Scalar, OSD. This will increase the stability of the system.

There is some control signals list below:

**DCLK** – pixel clock output to DMD driver BD, provided as a reference clock for DMD driver.

**DVS** – Vertical synchronization signal output to DMD BD, provided as Vertical reference signal for DMD driver.

**DHS** – Horizontal synchronization signal output to DMD BD, provided as Horizontal reference signal for DMD driver.

**DEN** – Data enable signal output to DMD BD, provided as a valid data indicator signal for DMD driver.

**VCLK** – V-port pixel clock.

**VPEN** – V-port data enable.

**VVS** – V-port Vertical Synchronization.

**VHS** – V-port Horizontal Synchronization.

**VFILED** – V-port Even/Odd frame indicator.

**RESETZ** – Output to DMD driver BD as RESETZ signal for DMD normal operation.

**ABNORMAL** – Input to CPU for indicating abnormal condition, if the CPU detects an abnormal status, it will disable lamp ignition.

**POWERON** – Output to power to enable the other power source into normal working situation.

**LAMPLIT** – Input signal as an indicator that the Lamp is ON or OFF.

**LED1, LED2** – Output to TR BD to enable the LED ON or OFF.

**IRRCVR0** – System IR input to CPU as remote control signals.

**MCKEXT** – Memory clock to CPU.

**DCKEXT** – Data clock to for Scaling.

**I2C\_SDA, I2C\_SCL** – I2C format data transfer line.

- ♦ **EEPROM**

Store the system information for user friendly.

- ♦ **Flash Memory**

System software was stored in this chip; the memory size is 4M bits.

- ♦ **IR Receiver schematic:**

The IS1U621 is miniaturized receivers for infrared remote control systems. PIN diode and pre-amplifier are assembled on lead frame, the epoxy package is designed as IR filter. The demodulated output signal can directly be decoded by a microprocessor. The main benefit is the reliable function even in disturbed ambient and the protection against uncontrolled output pulses.

- ♦ **Electronic System Protection for abnormal state:**

The circuit of electronic system protection for abnormal state is used for the hardware light off and power off in abnormal state of thermal and safety issues. If the protection function is active then the software system will detect the abnormal signal.

- ♦ **Sensor BD:**

The Sensor BD provides the color wheel index signal to DMD BD. The CWINDEX shall indicate the beginning of the red light on the DMD device. The phase of the display data on the DMD based on the CWINDEX signal. It can be configured to delay the CWINDEX for electronic alignment of the color wheel.

The timing of CWINDEX and the delayed CWINDEX is shown in Figure 1.

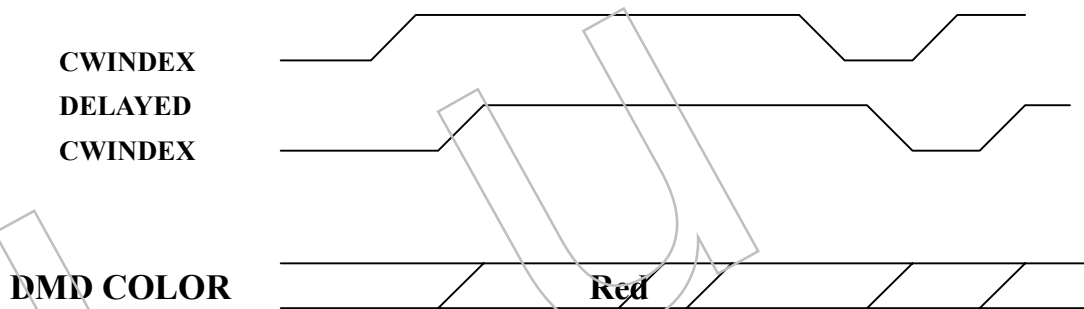
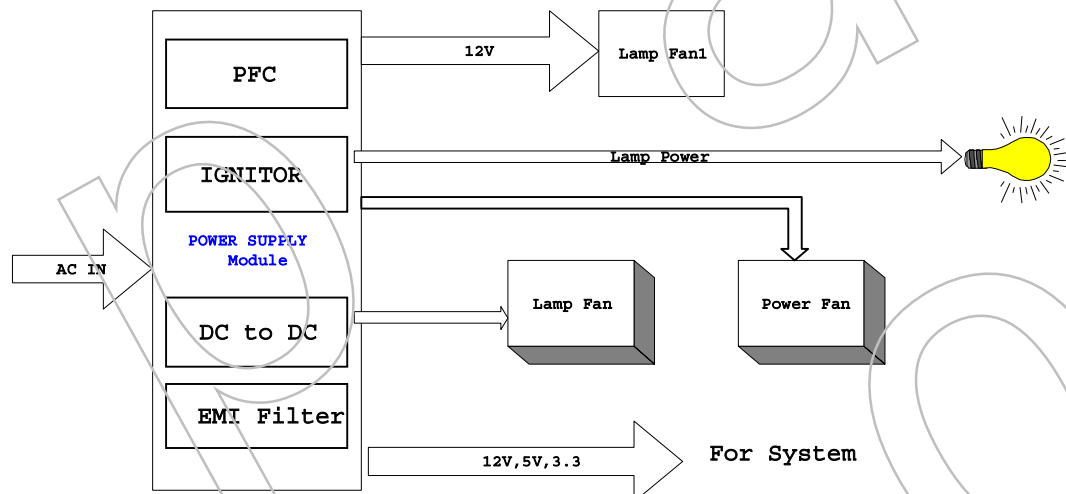


FIGURE 1

## B. Power Supply Module

Power Supply Module provide 12V, 5V, 3,3V for all system. And power supply module also include PFC board and DC/DC portion.

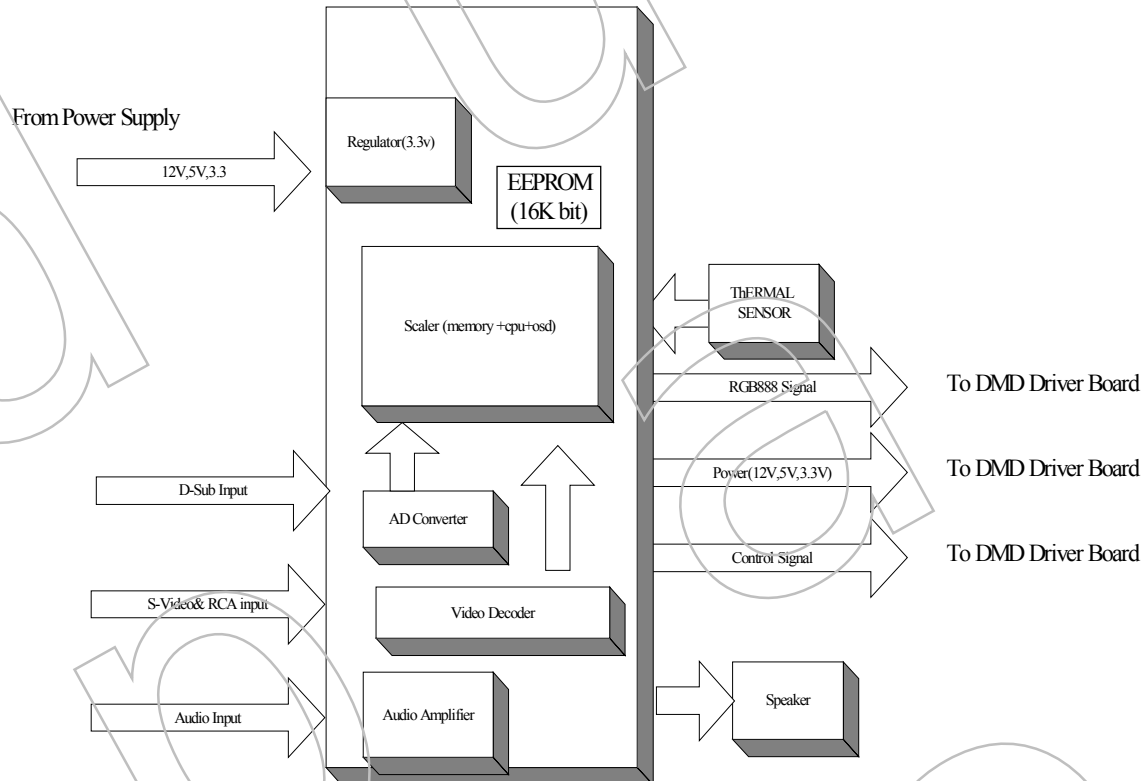


Pixelworks scaler(PW166) with x86 CPU and OSD and SDRAM is used for system control. It control hole system operation and with crucial role of this system. (Include fan speed, inter-lock SW,...)



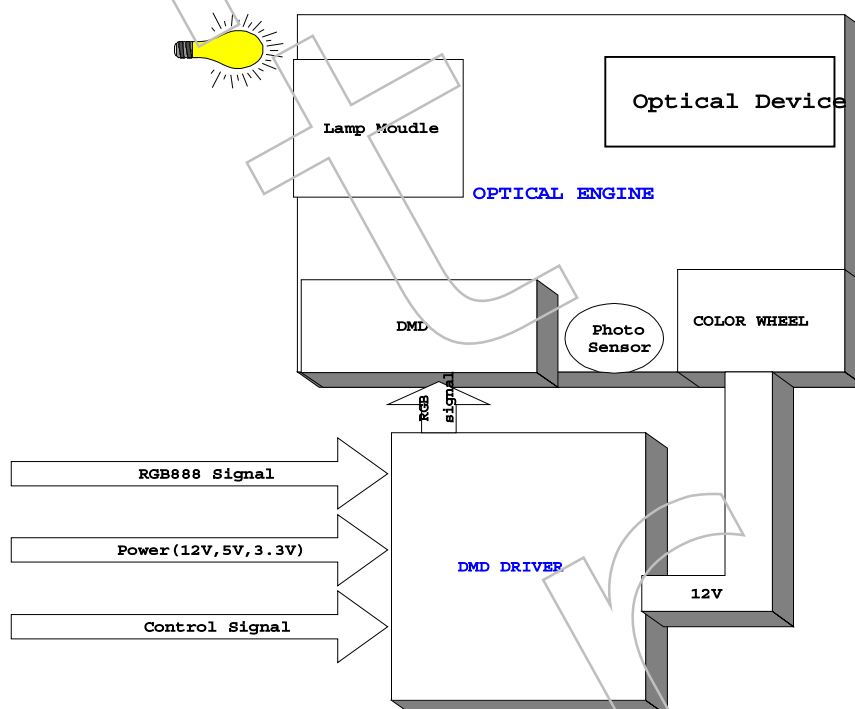
### C. A/D-DECODER (AD9883)

A/D-decoder (AD9883) is used for decode VGA analog signal to digital signal (RGB 888) which provide 24 bit true color resolution. Also can accept SOG(sync on green) and composit signal for PC input. It also support YPbPr signal.

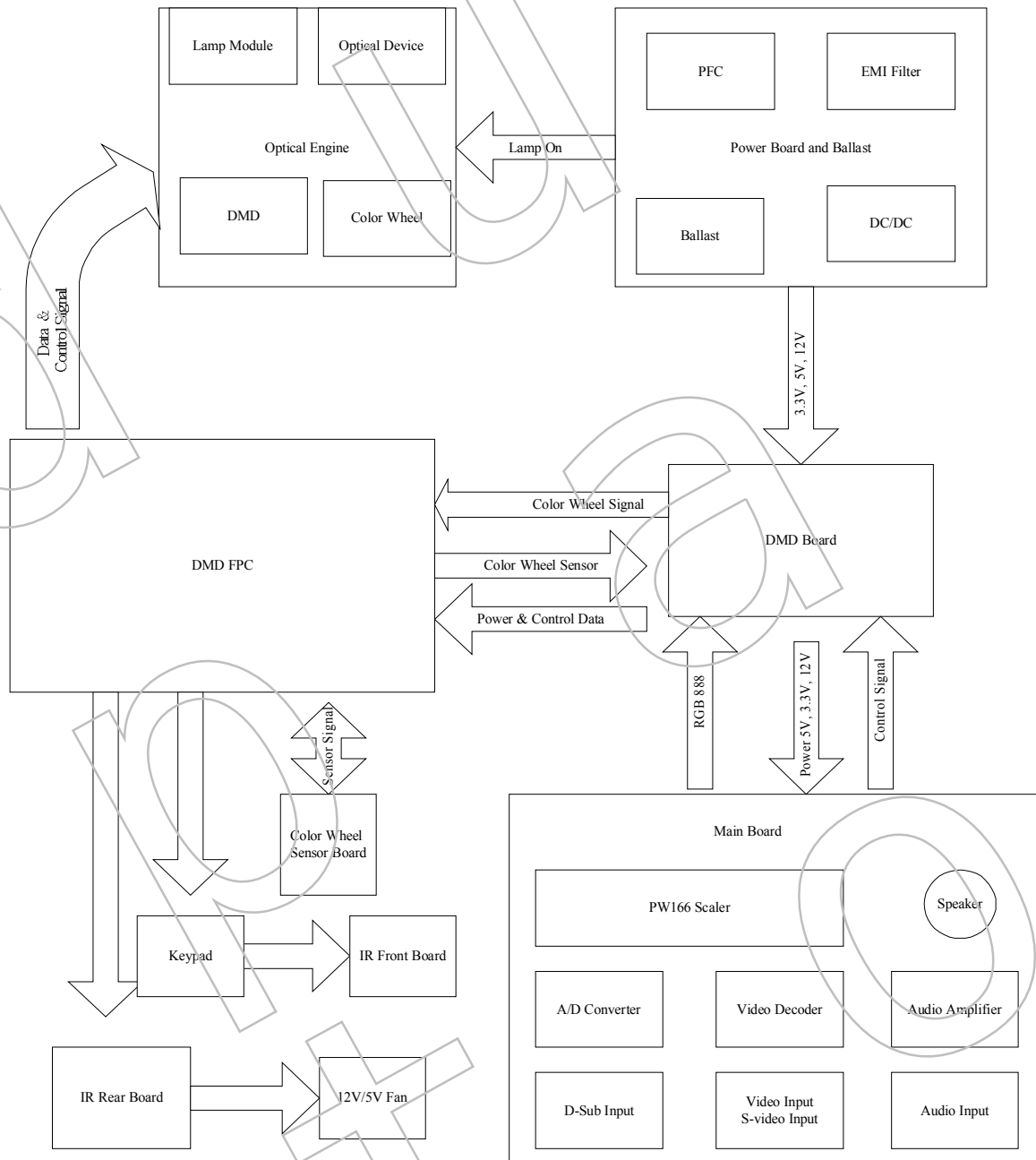


### D. DMD Driver

DMD driver board that transfer PW166 scalar output RGB888 signal to DMD chip acceptable signal to driving DMD mirror operation. The relate diagram as below:



E. Hole system block diagram is show as below

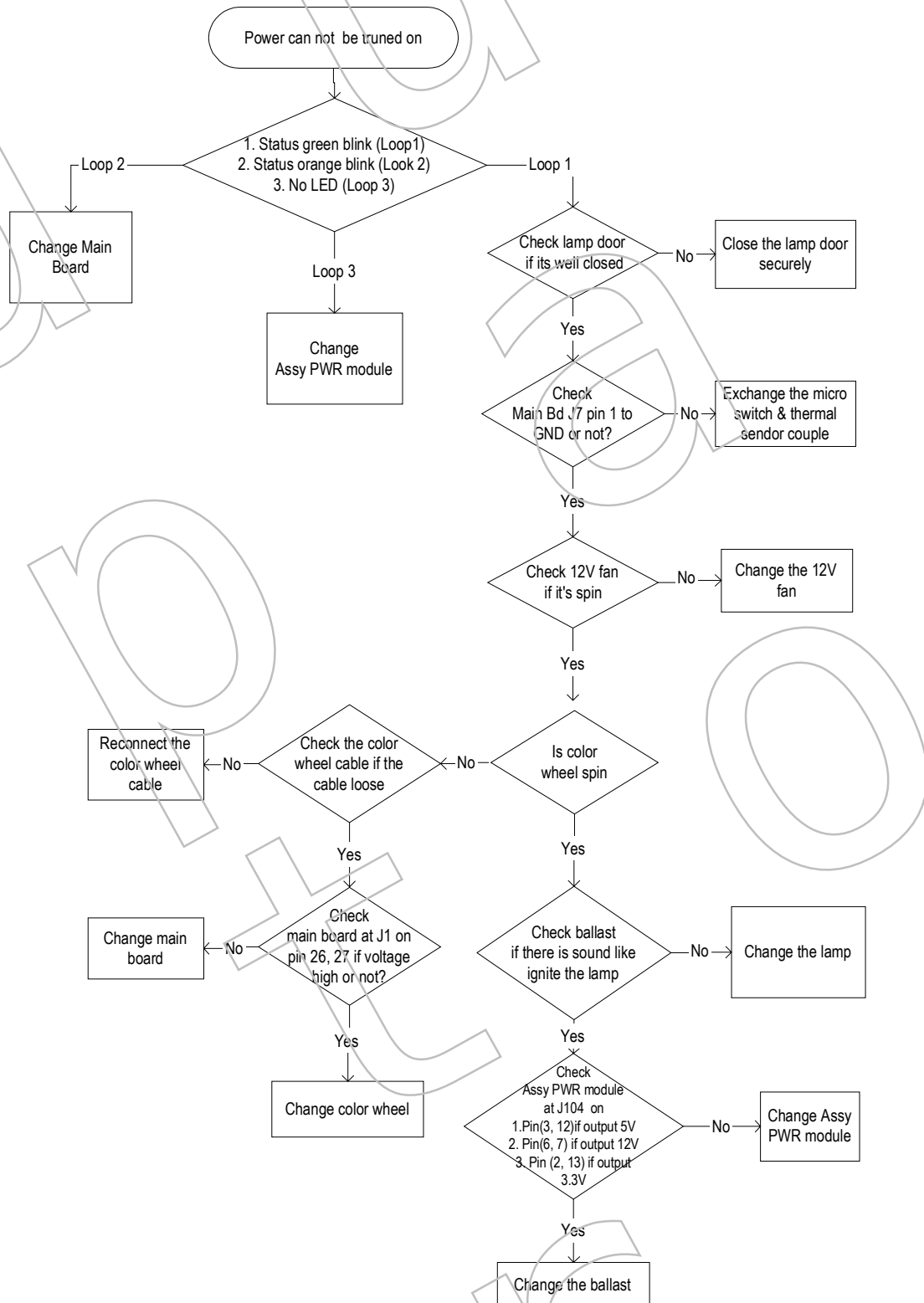


## 7. LED Indication List

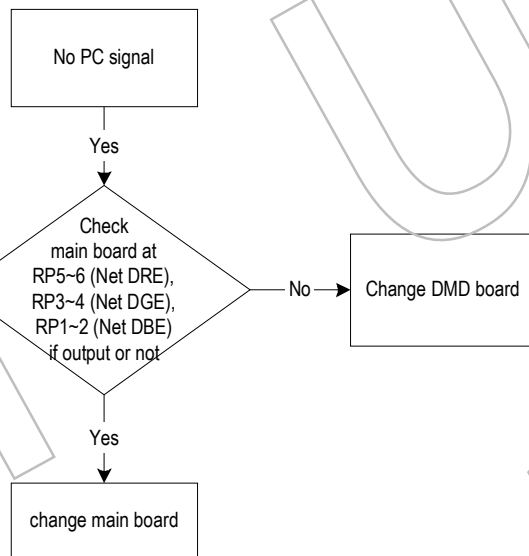
| LED Indication | Symptom     | Failure                 | Check Point |   | Action  |
|----------------|-------------|-------------------------|-------------|---|---|
|                |             |                         | PCB         | Reference   |   |
| Status LED     | Solid Green | Lamp Hour Over 1400 Hr. |             | See details in User's Manual  | 1. Change New Lamp<br>2. Reset the Lamp Hour                    |
| Status LED     | Flash Green | 1. Fan Spin             | DMD Board   | Plug Power core to see fan spin or not  | 1. Change the Fan   |
|                |             | 2. Door Lock            | Main Board  | Force to contact the doorlock to see it works ok or not   | 1. Change the Doorlock switch                                   |
|                |             | 3. Color wheel          | DMD Board   | To turn on the projector to hear the color wheel is running or not                                | 1. Follow the Power can not be truned on Trouble shouting guide |
|                |             | 4. Lamp                 |             | Waiting the system already cool down, and the above 3 items is OK, but the Lamp is not striked on | 1. Change the Lamp<br>2. If still not works, change the ballast |
|                |             | 5. Thermal              | Main Board  | After few minutes operation, the system is automatically power down.                              | 1. Thermal Problem  |
| Power LED      | Solid Orign | Standby Power           |             |   |   |
| Power LED      | Flash Green | Power on Sequence       |             |   |   |
| Power LED      | Solid Green | Normal Operation        |             |   |   |
| Power LED      | Flash Orgin | Power off Sequence      |             |   |   |

## 8. Trouble Shooting

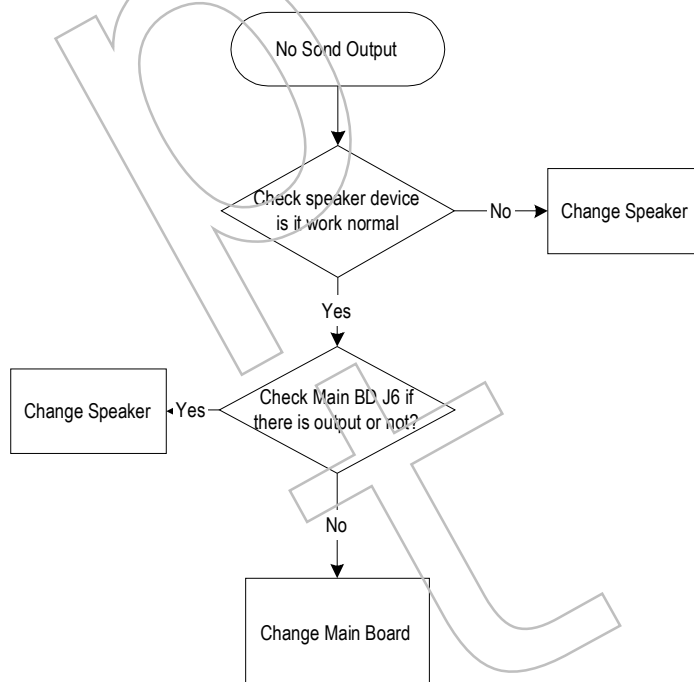
### 8.1 No Power



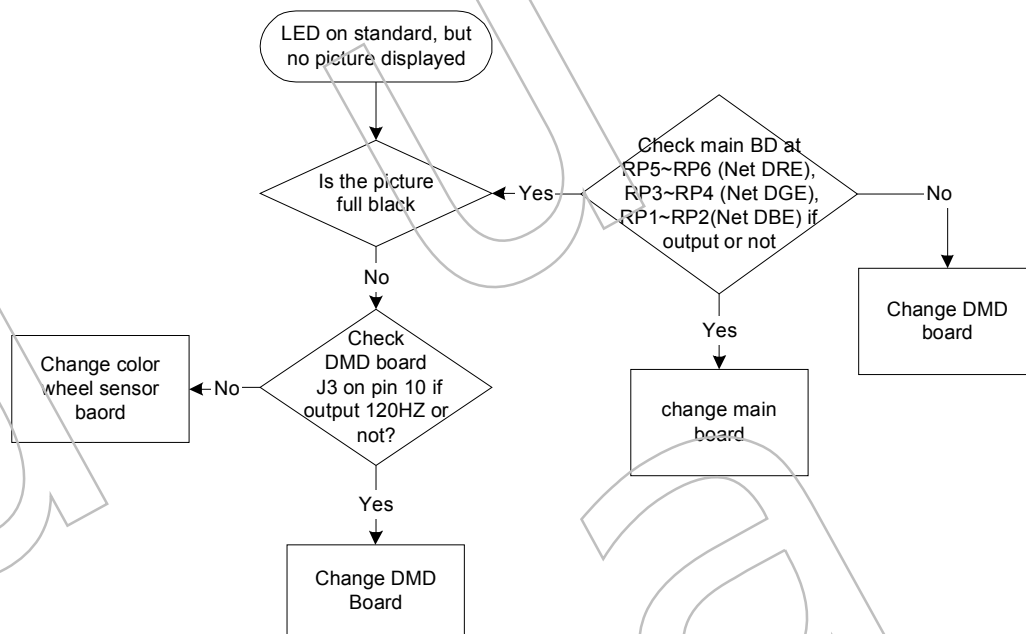
## 8.2 No Signal Displayed



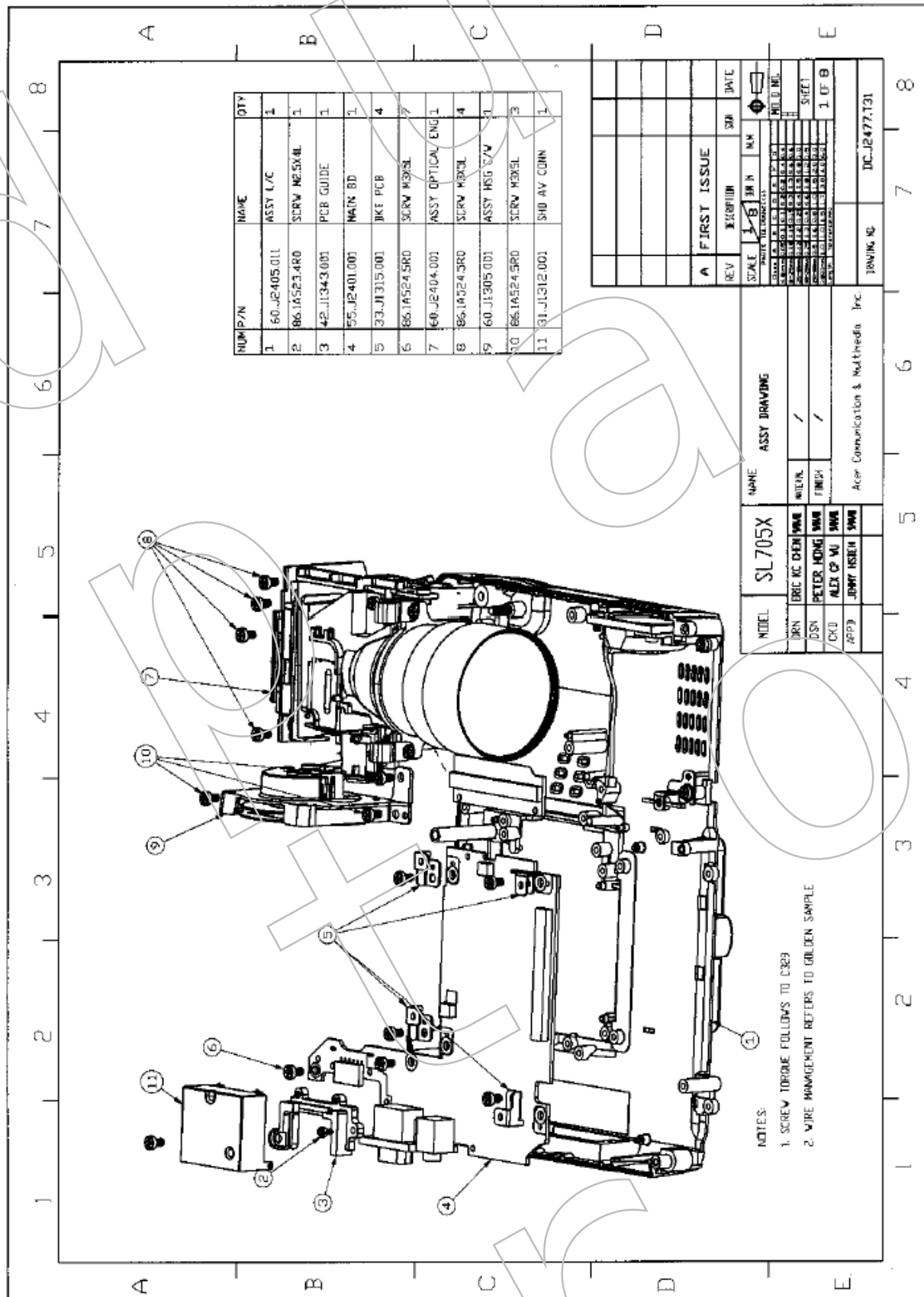
## 8.3 No Sound Output



## 8.4 LED Normal but No Image Displayed



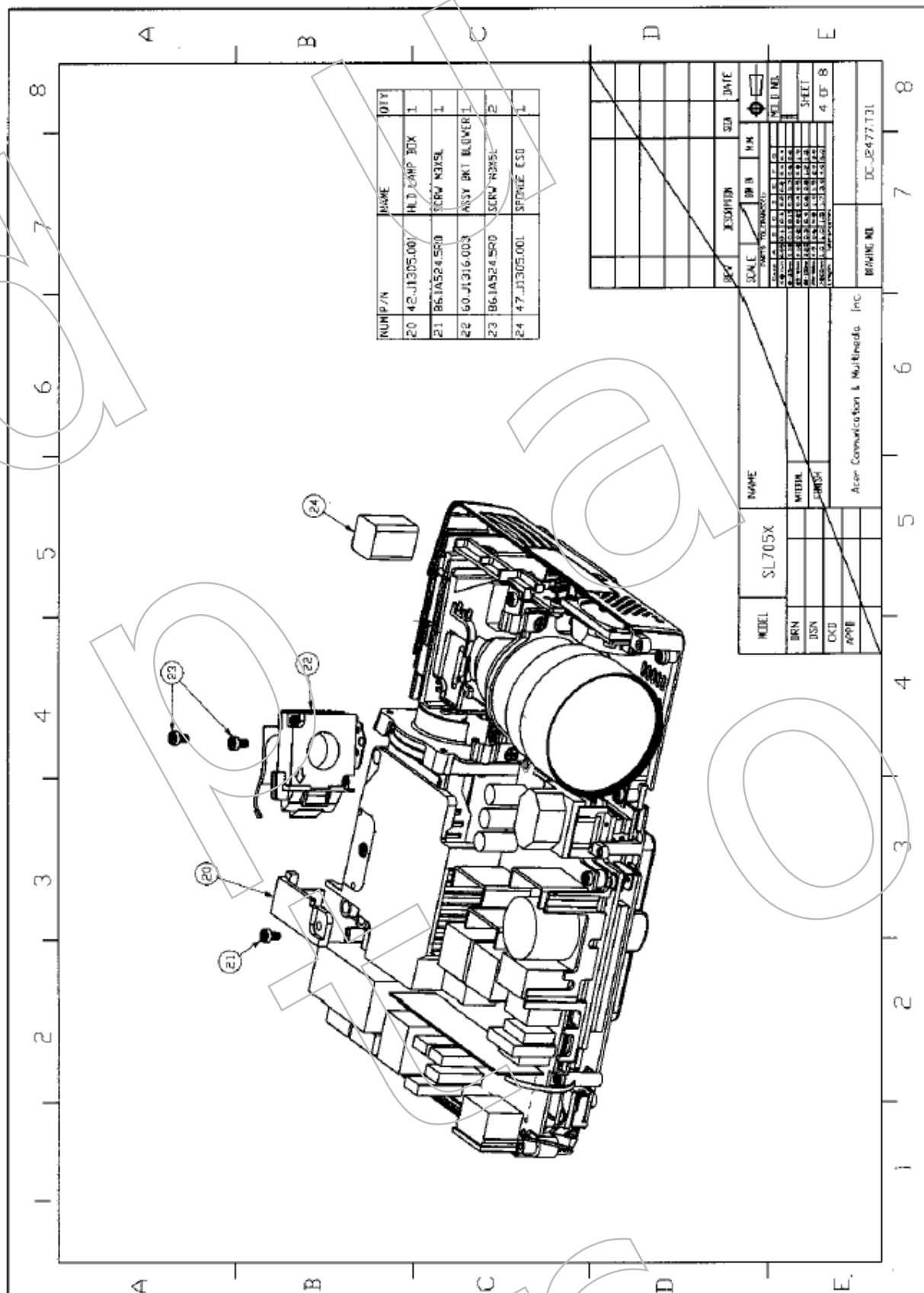
## 9. Replacement Parts





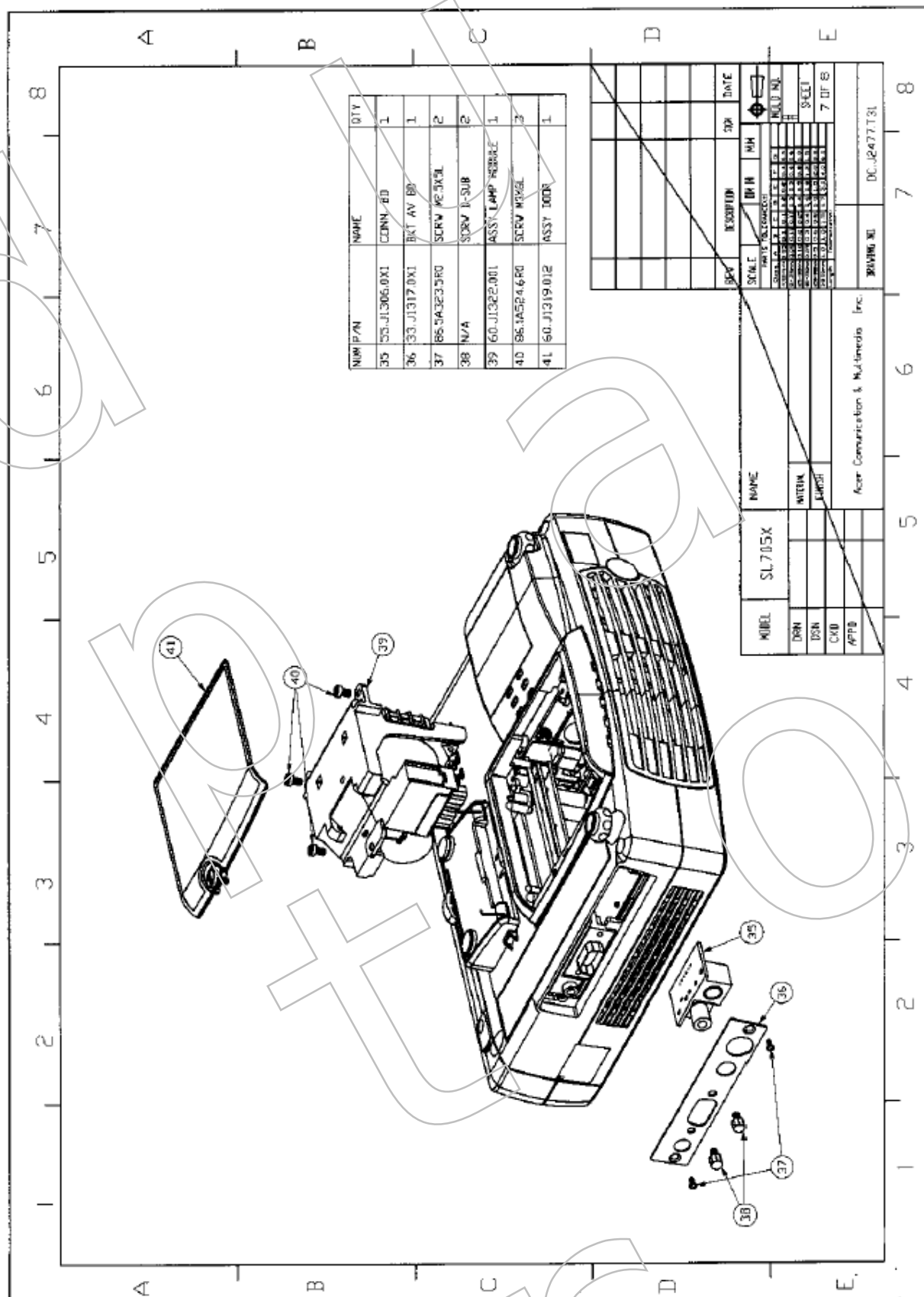












| NUM P/N | NAME         | QTY |
|---------|--------------|-----|
| 35      | 55-J1306.0X1 | 1   |
| 36      | 33-J1317.0X1 | 1   |
| 37      | 86-5A3235R0  | 2   |
| 38      | N/A          | 2   |
| 39      | 60-J1322.001 | 1   |
| 40      | 86-1A5246R0  | 2   |
| 41      | 60-J1319.012 | 1   |

|                                      |  |        |  |             |  |  |  |
|--------------------------------------|--|--------|--|-------------|--|--|--|
| MODEL                                |  | SL705X |  | NAME        |  |  |  |
| DSN                                  |  | ANTEN  |  | ANTEN       |  |  |  |
| DSN                                  |  | LAMP   |  | LAMP        |  |  |  |
| CAD                                  |  |        |  |             |  |  |  |
| APR                                  |  |        |  |             |  |  |  |
| Acce Communication & Multimedia Inc. |  |        |  | BANKING NO. |  |  |  |
|                                      |  |        |  | DC-12477131 |  |  |  |



## 10. Maintenance

### 10.1 Lamp Information

#### Use and Replacement of Lamp

The projector lamp lifetime normally is approximately 1200 to 1500 hours. During the normal lamp life, pictures and colors are projected brightly and crisply. Past the normal lamp life, colors and pictures may look faint.

An old lamp could cause a malfunction to the projector and may explode. When the Lamp Indicator lights up red or a message displays to suggest the time of lamp replacement, please change a new lamp or consult your dealer.

#### LED Status Indicators

|  |   |
|--|---|
| <b>Lamp Life Indicators</b>                                    | When this LED shows red continuously, it is warning you that the lamp life has exceeded 1500 hours. Replace the projection lamp with a new one immediately.   |
| <b>Change the Lamp, and Reset the Lamp Timer</b>               | The lamp has been in operation for 1200 hours. Change a new lamp for optimal performance.   |
| <b>Change the Lamp. The Power will turn off after 20 hours</b> | The lamp has been in operation for 1479 hours, and the power will turn off after 20 hours.  |
| <b>Change the Lamp!</b>  | The lamp has been in operation for over 1500 hours, and the power will turn off automatically in 10 minutes. All of these messages will not display for more than 3 minutes, but each message will be displayed whenever you turn on the projector.     |
| <b>Lamp is not properly attached</b>                           | LED blinks rapidly.   |
| <b>Temperature is too high</b>                                 | When the projector's internal temperature is too hot to operate safely, the LED blinks slowly for one minute and the lamp turns off automatically. If the LED light is off, the projector's lamp and temperature are operating under normal conditions. |



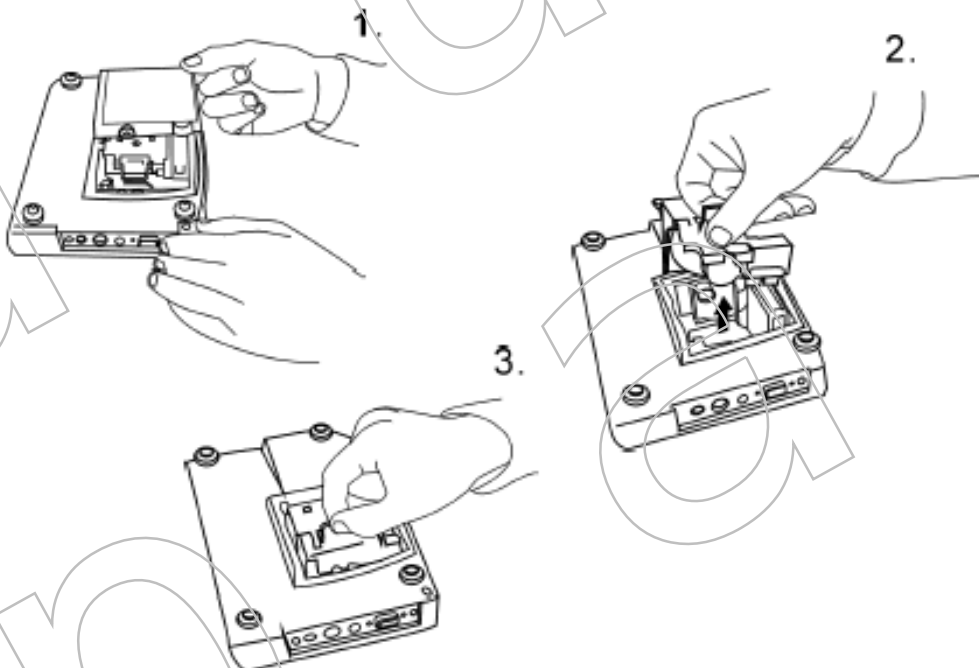
#### Caution

The LAMP indicator will light if the lamp becomes too hot. Turn off the power and let the projector cool for 45 minutes. If the LAMP indicator is still red when turning the power on, please contact your dealer.

## 10.2 Lamp Replacement

### **Caution**

To reduce the risk of electrical shock, always turn off the projector and disconnect the power cord before changing the lamp.



1. Press the POWER button to switch off the projector and disconnect the power cord from the outlet.
2. Loosen the screw and remove the lamp cover. If the lamp is hot, avoid burns by waiting 45 minutes until the lamp has cooled.
3. Loosen the 3 screws indicated by the arrows above. (It is strongly recommended you use a magnetic-headed screwdriver, if possible. Pull the handle to remove the lamp housing. If the screws are not loosened completely, they could injure your finger. Do not insert your hand into the box after the lamp is removed. If you touch the optical parts inside, this could cause color unevenness, etc.)
4. Replace the lamp with the new one. Insert it in the projector, and tighten the screws firmly. Loose screws may cause a bad connection, which may result in a malfunction.
5. Re-install the lamp cover and tighten the screw. Do not turn on the power with the lamp cover removed. Whenever the lamp is replaced, reset the total lamp operation time. Do not reset if the lamp is not replaced as this could cause breakage.



---

**⚠ Caution**

To reduce the risk of severe burns, allow the projector to cool for at least 45 minutes before replacing the lamp.

To reduce the risk of injuries to fingers and damage to internal components, use caution when removing lamp glass that has shattered into sharp pieces.

To reduce the risk of injuries to fingers and/or decreasing image quality by touching the lens, do not touch the empty lamp compartment when the lamp is removed.

This lamp contains mercury. Consult your local hazardous waste regulations to dispose of this lamp in a proper manner.

---

### 10.3 Resetting Lamp Hours

If you replace the lamp after 1500 hours of operation, please proceed as follows within 10 minutes of powering on.

| OSD                       | FUNCTION  |
|---------------------------|---|
| Lamp hours info Layer     | Press the Exit button on the projector for 3 seconds to display the total used lamp time.   |
| Lamp hour Reset Layer     | Press the MENU button on the projector during the lamp hour message. An adjustment message will appear.   |
| Lamp hour Reset OK! Layer | <ul style="list-style-type: none"><li>♦ Press ◀ or ▶ to reset lamp usage timer to 0. if success, OSD change to “Lamp hour Reset OK!” layer.</li></ul> |

---

## 11. Parts List

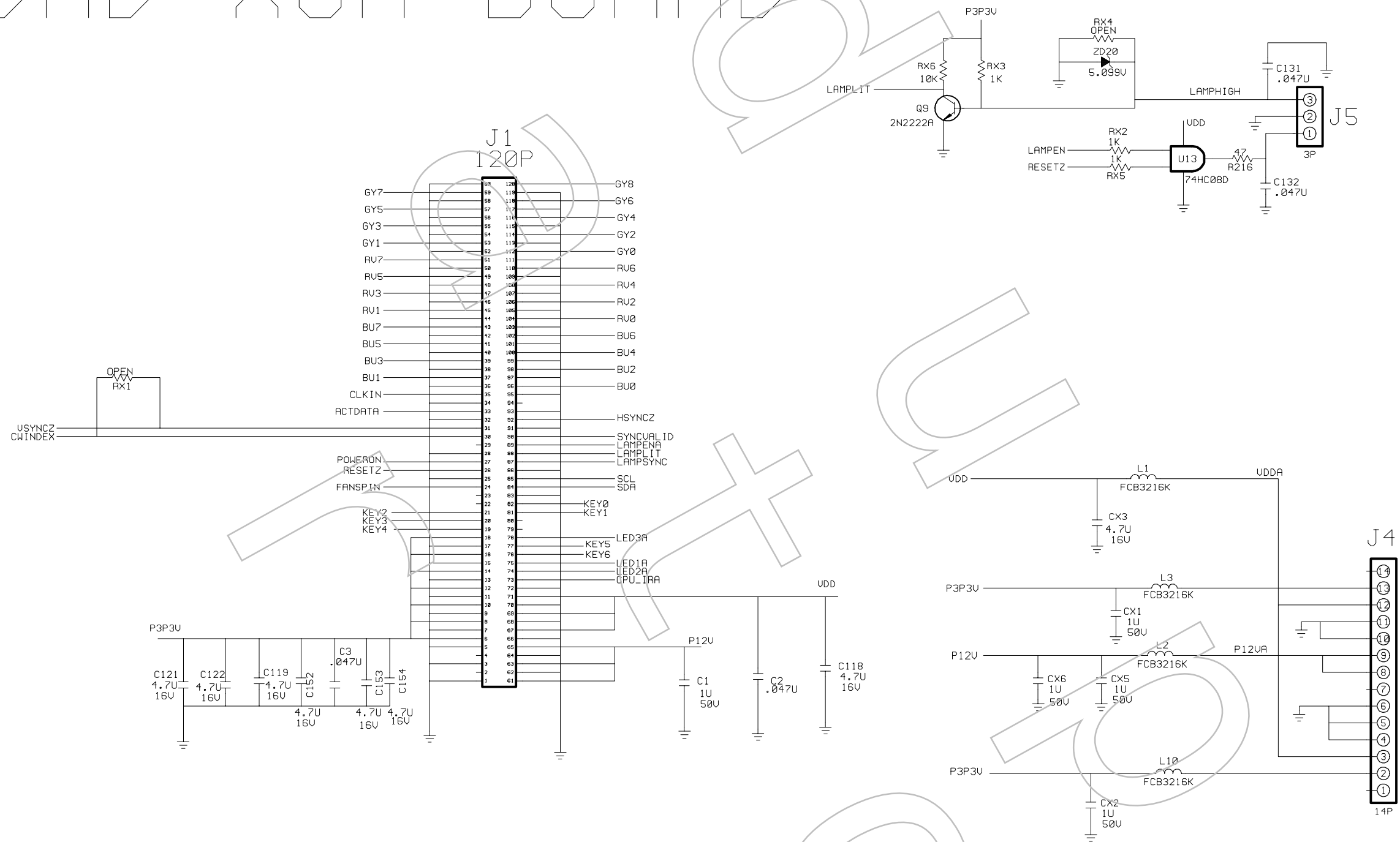
### LG RD-JT20 Spare Parts List – 99.J2477.L31

| NO. | PART NO.     | DESCRIPTION                   |
|-----|--------------|-------------------------------|
| 1   | 55.J2401.061 | PCBA MAIN BD LG SL705X        |
| 2   | 55.J2402.001 | DMD BD SL705X (MI)            |
| 3   | 60.J1306.003 | ASSY LAMP BOX SL700X          |
| 4   | 60.J1316.003 | ASSY BKT BLOWER               |
| 5   | 60.J1333.001 | ASSY EMI PLT NEW SL700X       |
| 6   | 60.J2404.001 | ASSY OPTICAL ENG SL705X       |
| 7   | 50.J1302.002 | WIRE IR BD REAR SL700X        |
| 8   | 50.J1309.011 | WIRE FPC/FFC 15/15P D1 92MM   |
| 9   | 55.J1301.001 | FPC-DMD BD SL700 X-MI         |
| 10  | 60.J2409.001 | ASSY HSG DMD MG SL705X        |
| 11  | 35.71J13.031 | LIGHT PIPE 6.2x3.8x20 SL700X  |
| 12  | 65.J1309.001 | ZOOMPROJECTIO LENS SL700X PRO |
| 13  | 71.01076.001 | IC DIGITA IMAG DMD1076-7LGA11 |
| 14  | 60.J2405.031 | ASSY LOW CASE P838 SL705X/LG  |
| 15  | 42.J1326.021 | FOOT REAR ABS P024 SL700X/3M  |
| 16  | 60.J1324.011 | ASSY FNT FOOT P024 SL700X/3M  |
| 17  | 65.J1308.001 | ASSY SPEAKER+WIRE 100MM       |
| 18  | 60.J2408.001 | ASSY HSG CW MG SL705X         |
| 19  | 35.80J13.021 | UV/IR CUT SL700X AOI          |
| 20  | 50.J1310.001 | WIRE 3/3P D1 75MM             |
| 21  | 33.J1317.012 | BKT AV BD 3M SL700X           |
| 22  | 50.J1301.001 | WIRE 3/3P 45MM LAMP SYNC      |
| 23  | 60.J1319.031 | ASSY DOOR P838 SL705X/LG      |
| 24  | 60.J1331.001 | ASSY LAMP PACKING SL700X      |
| 25  | 60.J1334.001 | ASSY CAP LENS SL700X          |
| 26  | 60.J1340.071 | ASSY U/C P896 SL705X/LG       |
| 27  | 55.J1305.011 | KEY PAD BD Acer XGA SL700 x M |
| 28  | 60.J1342.031 | ASSY HLD VENT P838 SL705X/LG  |
| 29  | 23.10059.001 | FAN DC 12V AXIAL 52*52*15 SA  |
| 30  | 23.10060.001 | FAN DC 5V AXIAL 40*40*10 DELT |
| 31  | 55.J1307.011 | IR REAR BD XGA SL700 X -M     |
| 32  | 65.J1304.001 | ASSY POWER SUPPLY SL700X      |
| 33  | 60.J2406.101 | ASSY FNT BZL P838 LG SL705X   |
| 34  | 55.J1307.001 | IR BD XGA SL700X -MI          |
| 35  | 60.J2407.101 | ASSY SUB FNT BZL P838 LG 705X |
| 36  | 40.J2401.001 | PLT NAME PC 0.254t SL705X/LG  |
| 37  | 60.J2402.041 | ASSY REMOTE+CABLE LG          |
| 38  | 60.J1313.021 | ASSY CABLE SL700X             |
| 39  | 98.J2402.011 | REMOTE CONTROLLER SL705X LG   |
| 40  | 60.J2403.051 | ASSY MANU+QUICK START LG      |
| 41  | 98.J1302.041 | SOFT CASE SL705X LG           |

## LG RD-JT21 Spare Parts List – 99.J2577.L31

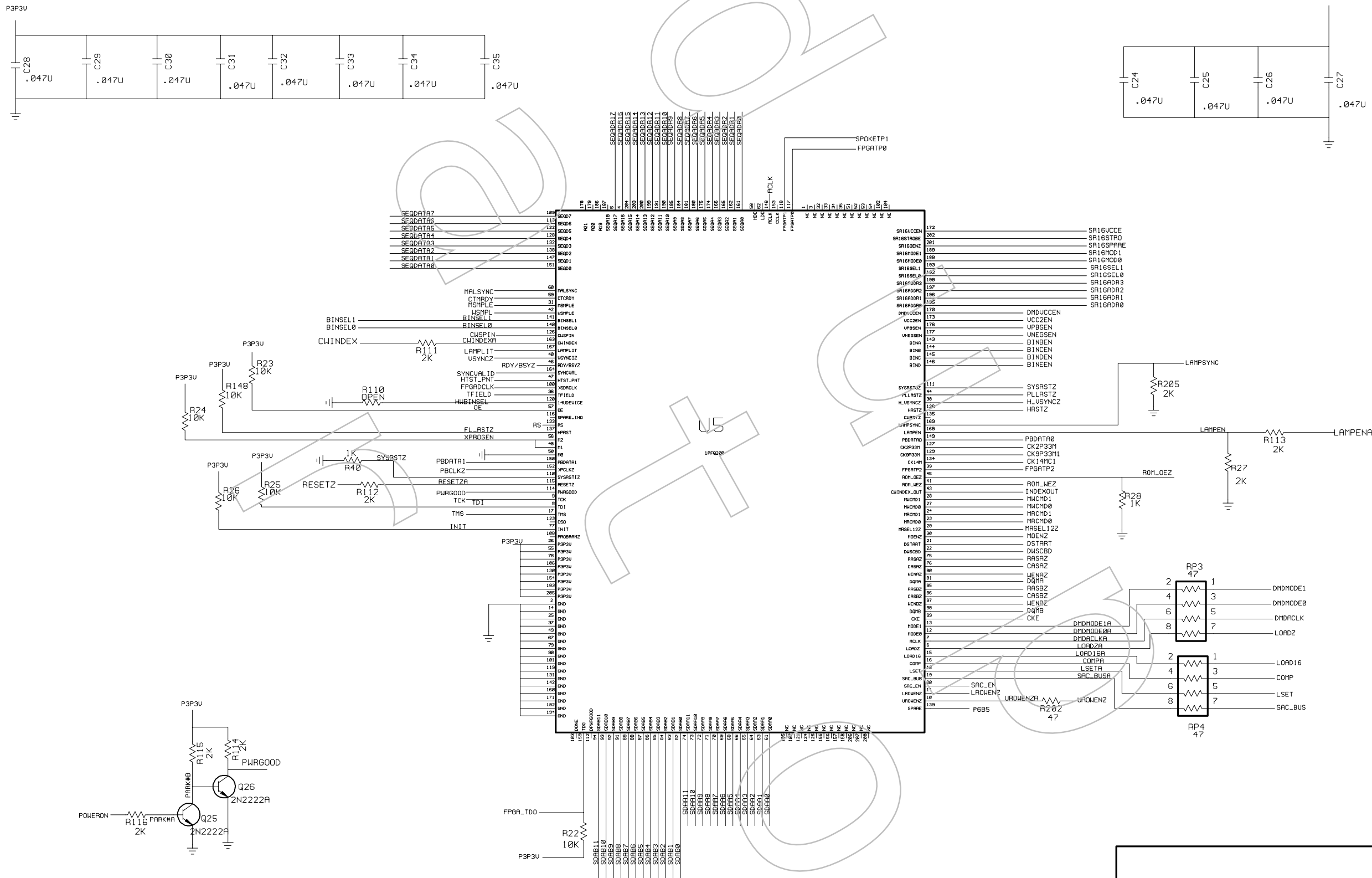
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| 2   | 55.J2502.001 | PCBA DMD BD SL705S MI         |
| 3   | 60.J1306.003 | ASSY LAMP BOX SL700X          |
| 4   | 60.J1316.004 | ASSY BKT BLOWER 3-PIN         |
| 5   | 60.J1333.001 | ASSY EMI PLT NEW SL700X       |
| 6   | 60.J2404.011 | ASSY OPTICAL ENG SL705S       |
| 7   | 50.J1302.002 | WIRE IR BD REAR SL700X        |
| 8   | 50.J1309.011 | WIRE FPC/FFC 15/15P D1 92MM   |
| 9   | 55.J2503.001 | PCBA FPC DMD BD SL705S        |
| 10  | 60.J2409.001 | ASSY HSG DMD MG SL705X        |
| 11  | 35.71J13.031 | LIGHT PIPE 6.2x3.8x20 SL700X  |
| 12  | 65.J1309.001 | ZOOMPROJECTIO LENS SL700X PRO |
| 13  | 71.08460.000 | IC DIGITAL IMAG DMD8460 LGA11 |
| 14  | 60.J2405.031 | ASSY LOW CASE P838 SL705X/LG  |
| 15  | 42.J1326.021 | FOOT REAR ABS P024 SL700X/3M  |
| 16  | 60.J1324.011 | ASSY FNT FOOT P024 SL700X/3M  |
| 17  | 65.J1308.001 | ASSY SPEAKER+WIRE 100MM       |
| 18  | 60.J2408.001 | ASSY HSG CW MG SL705X         |
| 19  | 35.80J13.021 | UV/IR CUT SL700X AOI          |
| 20  | 50.J1310.001 | WIRE 3/3P D1 75MM             |
| 21  | 33.J1317.012 | BKT AV BD 3M SL700X           |
| 22  | 50.J1301.001 | WIRE 3/3P 45MM LAMP SYNC      |
| 23  | 60.J1319.031 | ASSY DOOR P838 SL705X/LG      |
| 24  | 60.J1331.001 | ASSY LAMP PACKING SL700X      |
| 25  | 60.J1334.001 | ASSY CAP LENS SL700X          |
| 26  | 60.J1340.081 | ASSY U/C P896 SL705S/LG       |
| 27  | 55.J1305.011 | KEY PAD BD Acer XGA SL700 x M |
| 28  | 60.J1342.031 | ASSY HLD VENT P838 SL705X/LG  |
| 29  | 23.10059.001 | FAN DC 12V AXIAL 52*52*15 SA  |
| 30  | 23.10060.001 | FAN DC 5V AXIAL 40*40*10 DELT |
| 31  | 55.J1307.011 | IR REAR BD XGA SL700 X -M     |
| 32  | 65.J1304.001 | ASSY POWER SUPPLY SL700X      |
| 33  | 60.J2406.111 | ASSY FNT BZL P838 LG SL705S   |
| 34  | 55.J1307.001 | IR BD XGA SL700X -Mi          |
| 35  | 60.J2407.111 | ASSY SUB FNT BZL P838 LG 705S |
| 36  | 40.J2401.001 | PLT NAME PC 0.254t SL705X/LG  |
| 37  | 60.J2402.041 | ASSY REMOTE+CABLE LG          |
| 38  | 60.J1313.021 | ASSY CABLE SL700X             |
| 39  | 98.J2402.011 | REMOTE CONTROLLER SL705X LG   |
| 40  | 60.J2403.051 | ASSY MANU+QUICK START LG      |
| 41  | 98.J1302.041 | SOFT CASE SL705X LG           |

# DMD XGA BOARD



NOTES: 1. Resistor values are in ohm, K=1,000 ohm, M=1,000,000 ohm  
2. All resistors are 1/8 watt, 5% except where otherwise indicated  
3.  $\nabla \perp \perp$  Represents PCB common ground.

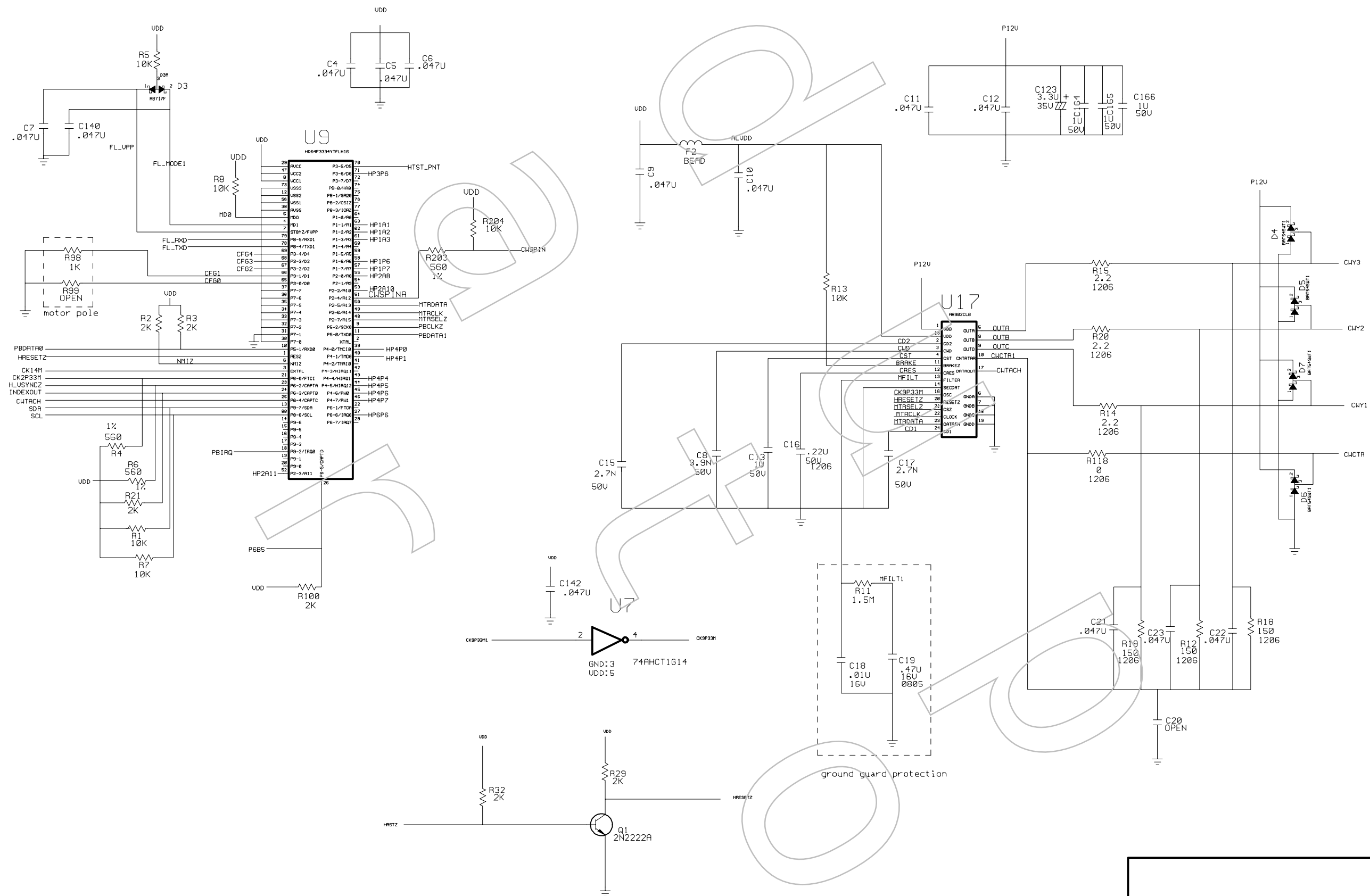
|  |              |   |                    |                                      |
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| ACERVIEW SL705X SCHEMATICS               |              |   |                    |                                      |
| SIZE<br>A3                               | J2402A01.SCH | FAB<br>A01                                | Doc.No.<br>304-C02 | REV.<br>0                            |
| DATE : 12/04/2001                        |              | Sheet 1 OF 11                             |                    |                                      |
| Project Code. 99.J2477.001               |              |   |                    |                                      |
| Prepared By<br>VICKI CHANG<br>12/04/2001 |              | Reviewed By<br>DAVID HN LIN<br>12/04/2001 |                    | Approved By<br>T.S. WU<br>12/04/2001 |

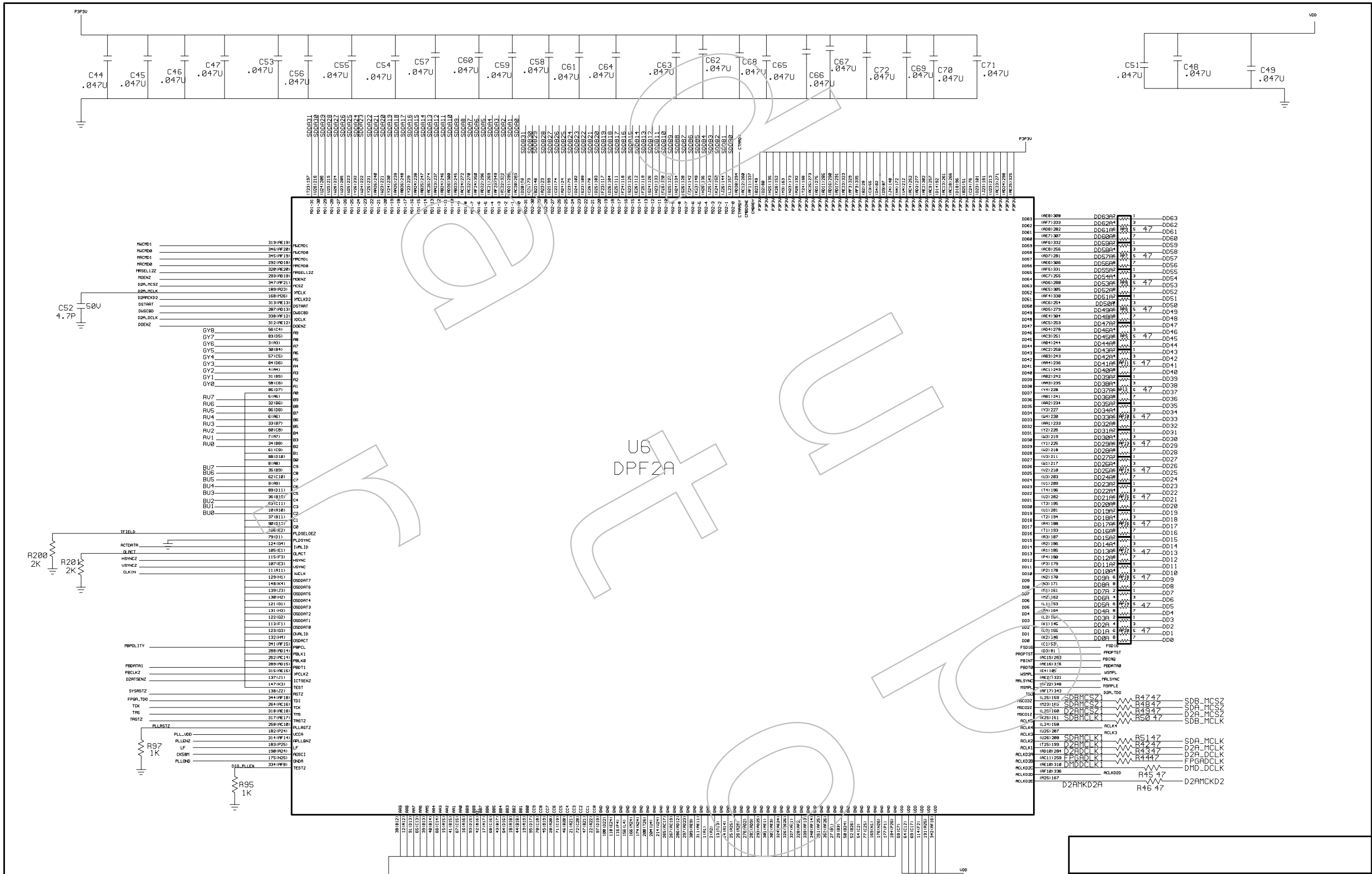


NOTES: 1. Resistor values are in ohm, K=1,000 ohm, M=1,000,000 ohm  
2. All resistors are 1/8 watt, 5% except where otherwise indicated  
3.  $\nabla$   $\nabla$   $\nabla$  Represents PCB common ground.

|  |              |   |                    |                                      |
|--|--------------|---|--------------------|--------------------------------------|
| ACERVIEW SL705X SCHEMATICS               |              |   |                    |                                      |
| SIZE<br>A3                               | J2402A01.SCH | FAB<br>A01                                | Doc.No.<br>304-C02 | REV.<br>0                            |
| DATE : 12/04/2001                        |              | Sheet 2                                   | OF 11              |                                      |
| Project Code. 99.J2477.001               |              |   |                    |                                      |
| Prepared By<br>VICKI CHANG<br>12/04/2001 |              | Reviewed By<br>DAVID HN LIN<br>12/04/2001 |                    | Approved By<br>T.S. WU<br>12/04/2001 |



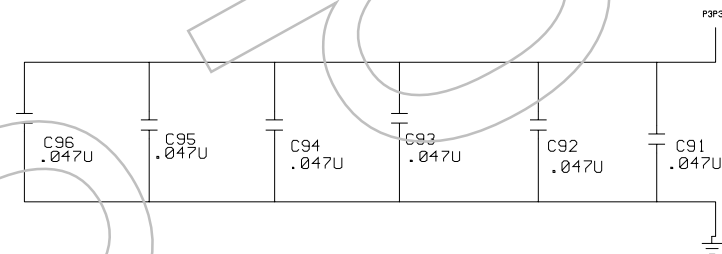
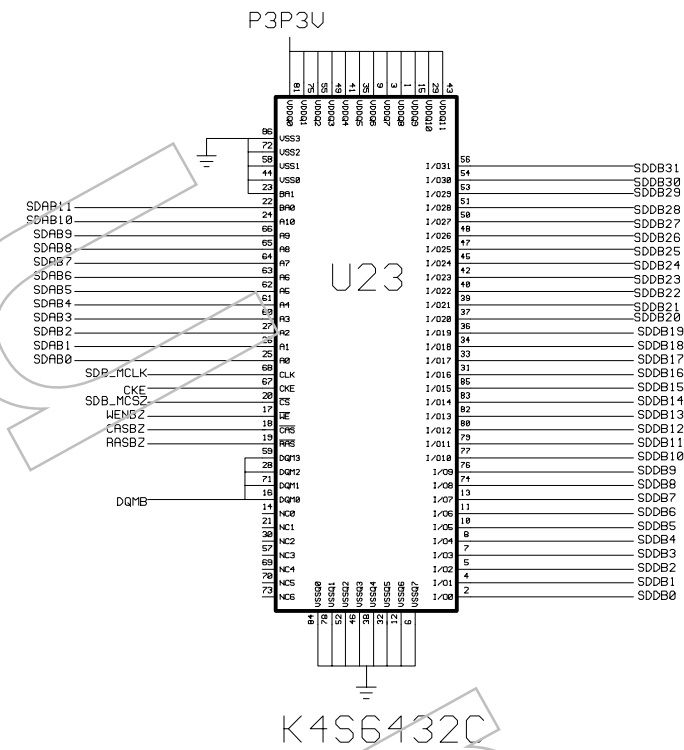
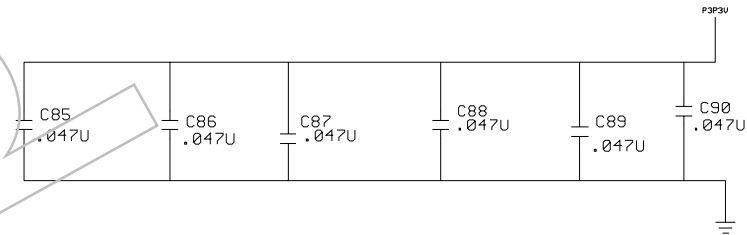




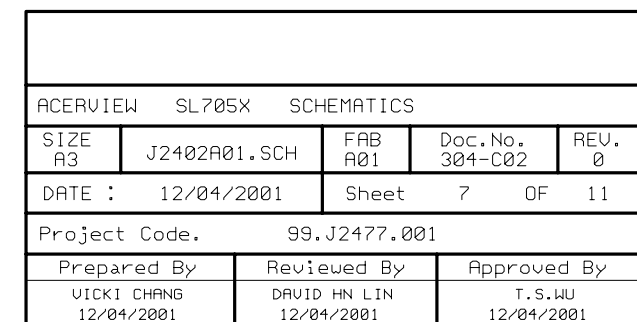
NOTES: 1. Resistor values are in ohm, K=1,000 ohm, M=1,000,000 ohm  
 2. All resistors are 1/8 watt, 5% except where otherwise indicated  
 3.  $\nabla \nabla \nabla$  Represents PCB common ground.

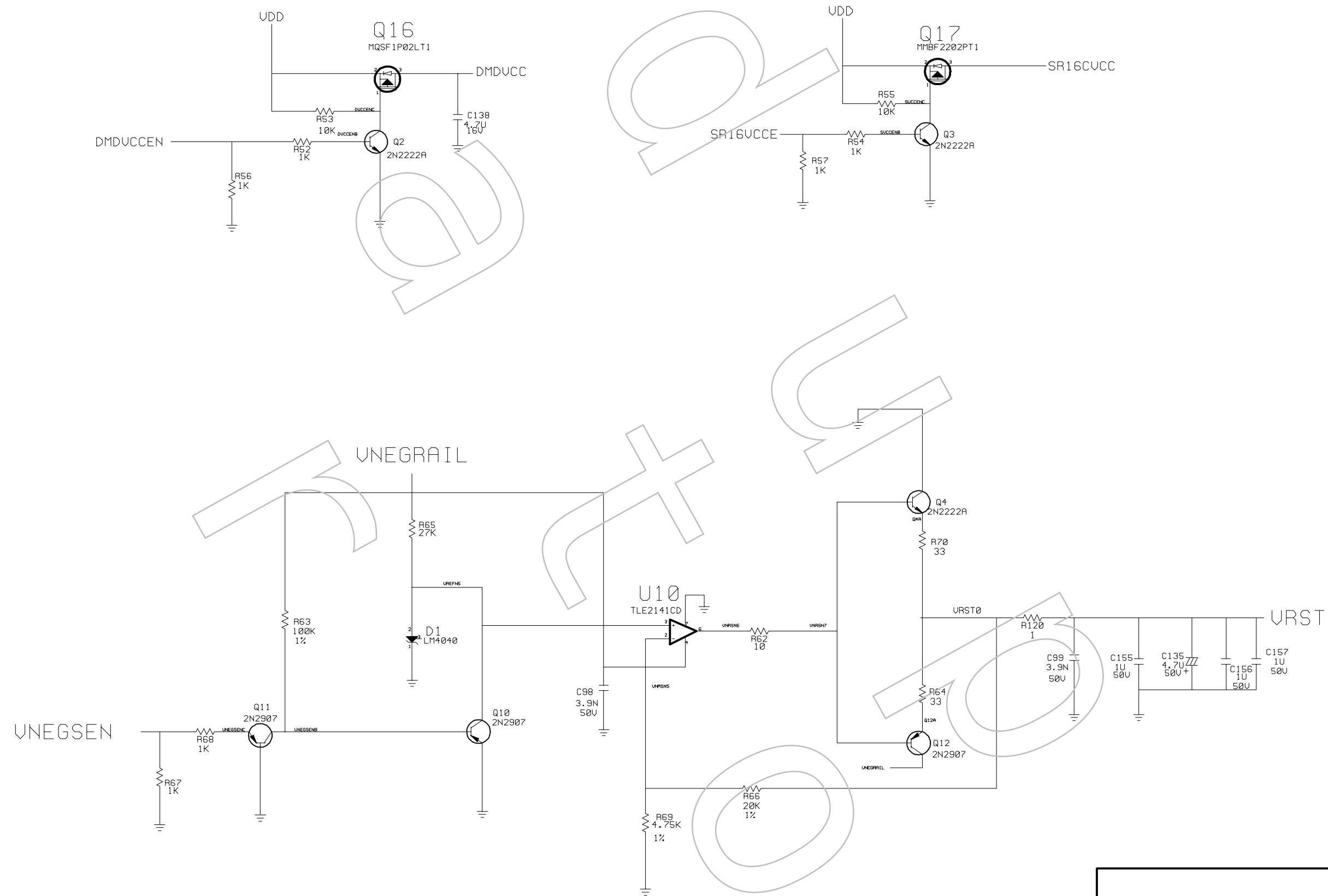
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| SIZE<br>A3                               | J2402A01.SCH | FAB<br>A01                                | Doc.No.<br>304-C02 | REV.<br>0                            |
| DATE : 12/04/2001                        |              | Sheet 5 OF 11                             |                    |                                      |
| Project Code. 99.J2477.001               |              |   |                    |                                      |
| Prepared By<br>VICKI CHANG<br>12/04/2001 |              | Reviewed By<br>DAVID HN LIN<br>12/04/2001 |                    | Approved By<br>T.S. WU<br>12/04/2001 |

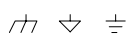




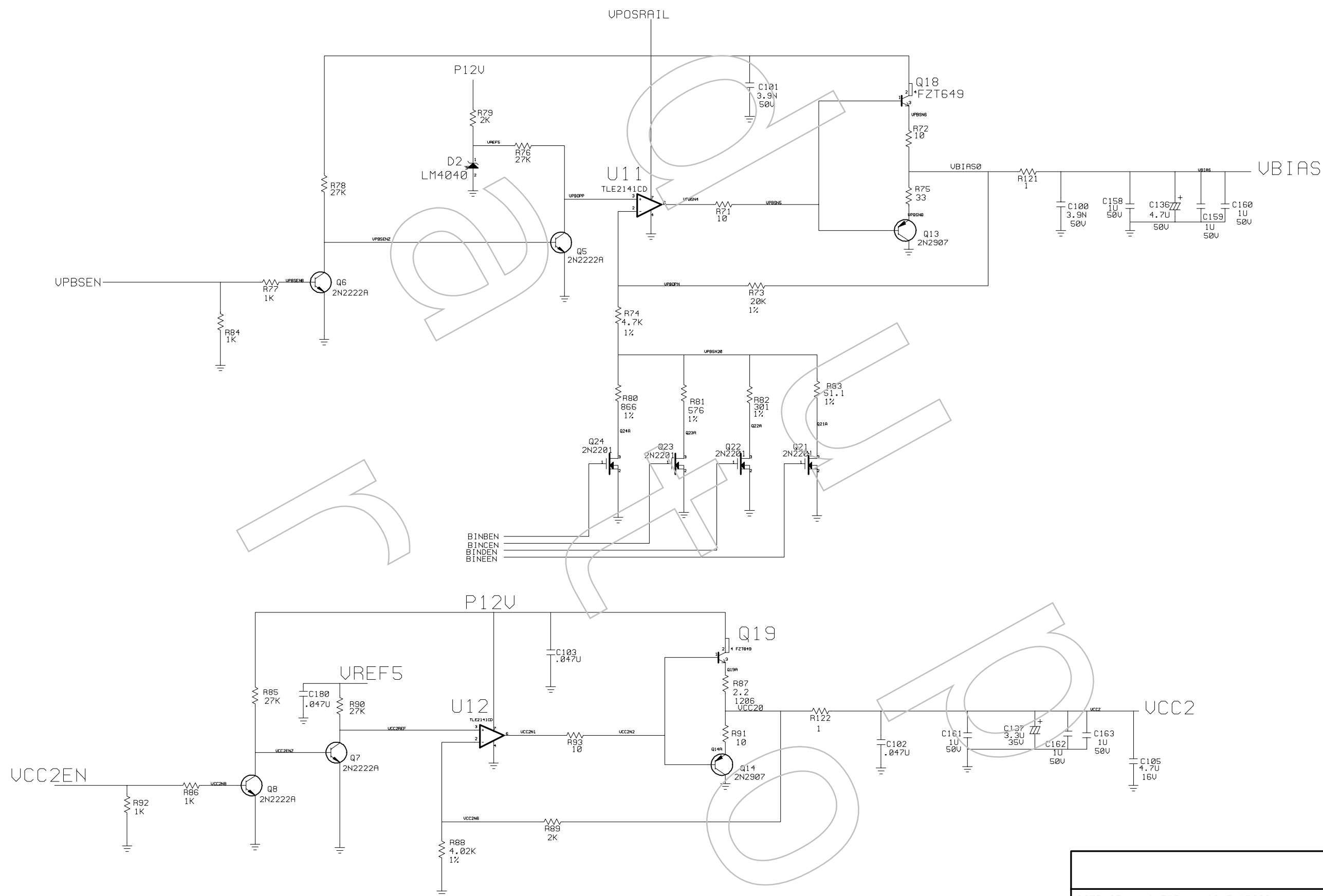
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| ACERVIEW SL705X SCHEMATICS |              |              |                    |                       |
| SIZE<br>A3                 | J2402A01.SCH | FAB<br>A01   | Doc.No.<br>304-C02 | REV.<br>0             |
| DATE : 12/04/2001          |              | Sheet        | 6                  | OF 11                 |
| Project Code. 99.J2477.001 |              |              |                    |                       |
| Prepared By                |              | Reviewed By  |                    | Approved By           |
| VICKI CHANG<br>12/04/2001  |              | DAVID HN LIN |                    | T.S. WU<br>12/04/2001 |





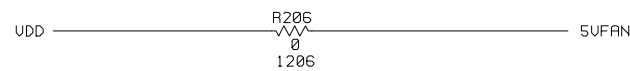
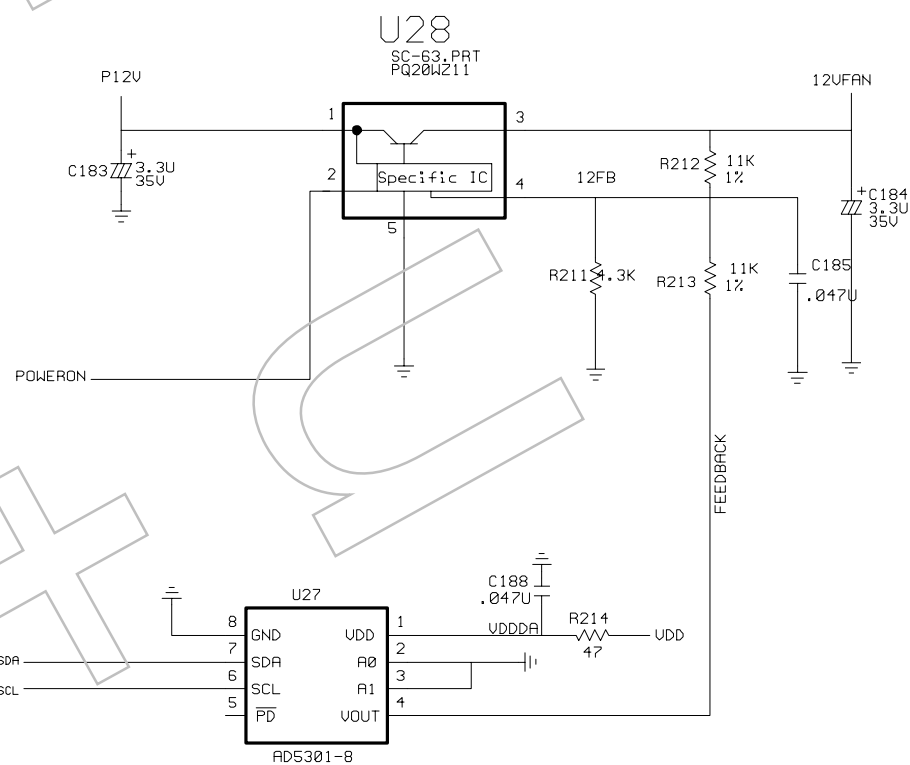
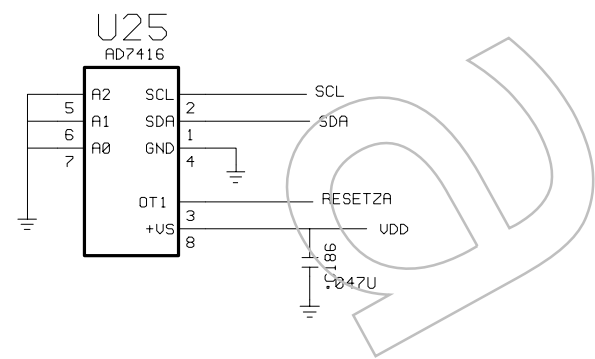
- NOTES:
1. Resistor values are in ohm, K=1,000 ohm, M=1,000,000 ohm
  2. All resistors are 1/8 watt, 5% except where otherwise indicated
  3.  Represents PCB common ground.

|  |              |   |                    |                                      |
|--|--------------|---|--------------------|--------------------------------------|
| ACERVIEW SL705X SCHEMATICS               |              |   |                    |                                      |
| SIZE<br>A3                               | J2402A01.SCH | FAB<br>A01                                | Doc.No.<br>304-C02 | REV.<br>0                            |
| DATE : 12/04/2001                        |              | Sheet                                     | 8                  | OF 11                                |
| Project Code.                            |              | 99.J2477.001                              |                    |                                      |
| Prepared By<br>VICKI CHANG<br>12/04/2001 |              | Reviewed By<br>DAVID HN LIN<br>12/04/2001 |                    | Approved By<br>T.S. WU<br>12/04/2001 |

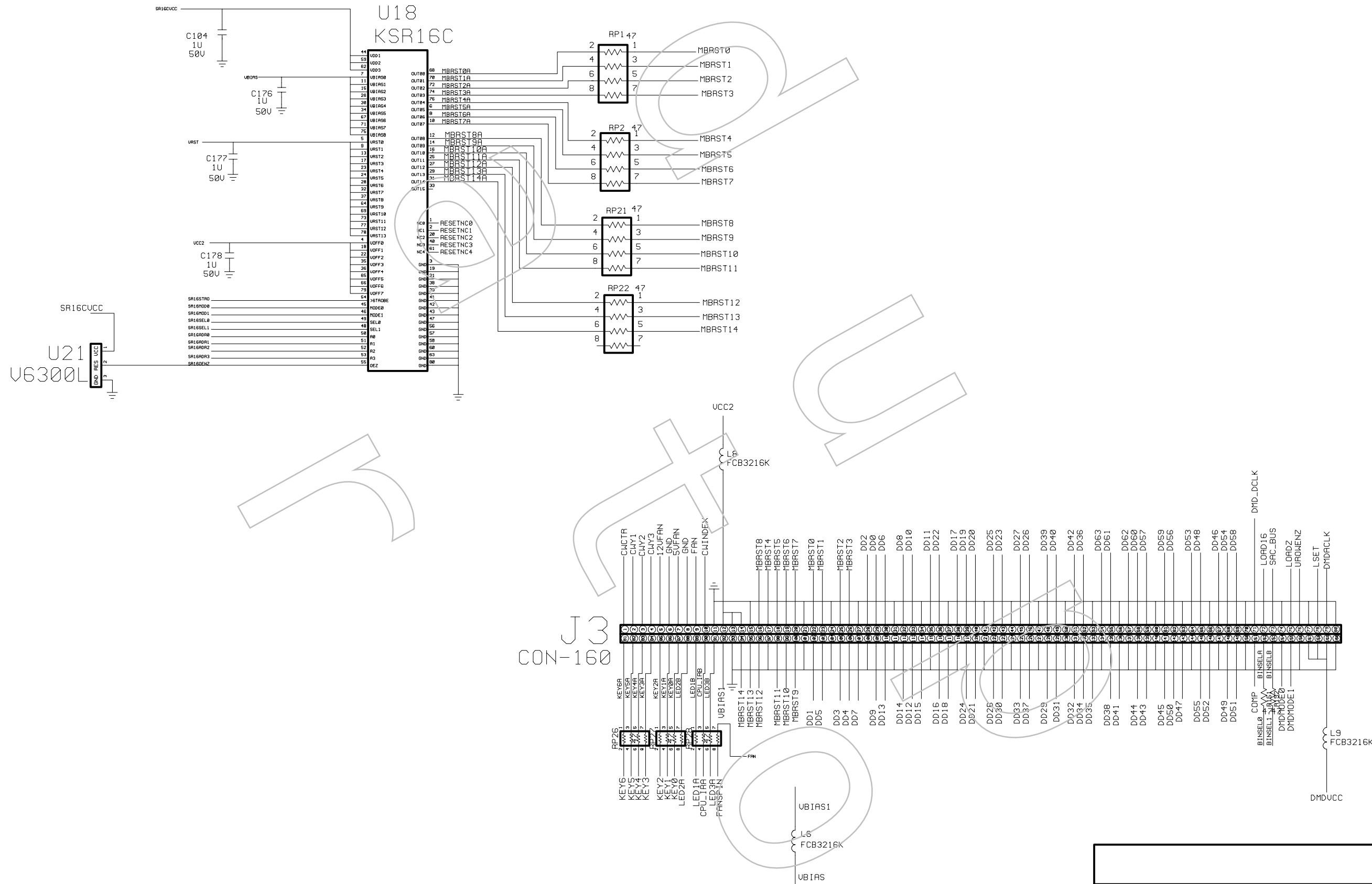


- NOTES:
1. Resistor values are in ohm, K=1,000 ohm, M=1,000,000 ohm
  2. All resistors are 1/8 watt, 5% except where otherwise indicated
  3.  $\nabla$   $\nabla$   $\nabla$  Represents PCB common ground.

|                            |              |                            |                       |           |
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|                            |              |                            |                       |           |
| ACERVIEW SL705X SCHEMATICS |              |                            |                       |           |
| SIZE<br>A3                 | J2402A01.SCH | FAB<br>A01                 | Doc.No.<br>304-C02    | REV.<br>0 |
| DATE : 12/04/2001          |              | Sheet 9                    | OF 11                 |           |
| Project Code.              |              | 99.J4777.001               |                       |           |
| Prepared By                |              | Reviewed By                | Approved By           |           |
| VICKI CHANG<br>12/04/2001  |              | DAVID HN LIN<br>12/04/2001 | T.S. WU<br>12/04/2001 |           |



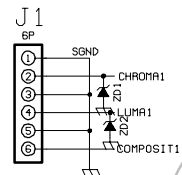
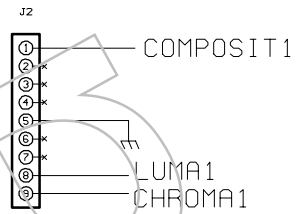
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| ACERVIEW SL705X SCHEMATICS               |              |   |                    |                                      |
| SIZE<br>A3                               | J2402A01.SCH | FAB<br>A01                                | Doc.No.<br>304-C02 | REV.<br>0                            |
| DATE : 12/04/2001                        |              | Sheet                                     | 10                 | OF 11                                |
| Project Code. 99.J2477.001               |              |   |                    |                                      |
| Prepared By<br>VICKI CHANG<br>12/04/2001 |              | Reviewed By<br>DAVID HN LIN<br>12/04/2001 |                    | Approved By<br>T.S. WU<br>12/04/2001 |



NOTES:  
 1. Resistor values are in ohm, K=1,000 ohm, M=1,000,000 ohm  
 2. All resistors are 1/8 watt, 5% except where otherwise indicated  
 3.  $\nabla$   $\nabla$   $\nabla$  Represents PCB common ground.

|  |              |   |                    |                                      |
|--|--------------|---|--------------------|--------------------------------------|
| ACERVUE SL705X SCHEMATICS                |              |   |                    |                                      |
| SIZE<br>A3                               | J2402A01.SCH | FAB<br>A01                                | Doc.No.<br>304-C02 | REV.<br>0                            |
| DATE : 12/04/2001                        |              | Sheet                                     | 11                 | OF 11                                |
| Project Code. 99.J2477.001               |              |   |                    |                                      |
| Prepared By<br>VICKI CHANG<br>12/04/2001 |              | Reviewed By<br>DAVID HN LIN<br>12/04/2001 |                    | Approved By<br>T.S. WU<br>12/04/2001 |

# EXRENSION BOARD



NOTES: 1. Resistor values are in ohm,  
K=1,000 ohm, M=1,000,000 ohm

2. All resistors are 1/8 watt, 5%  
except where otherwise indicated

3.  $\nabla$   $\nabla$   $\nabla$  Represents PCB common ground.

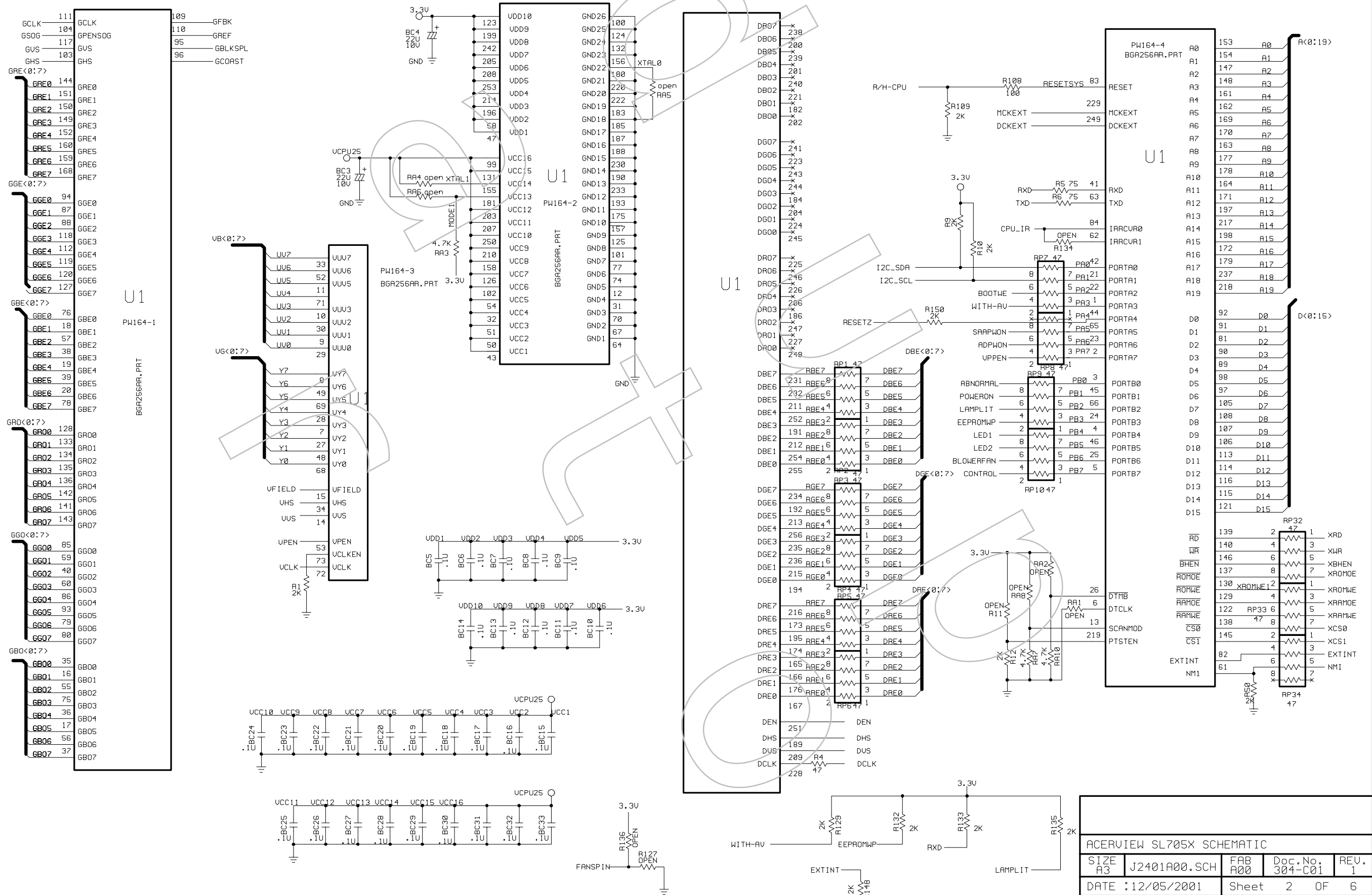
## SL705X EXTENSION BD

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|---------------|--------------|-------------|--------------|-------------|
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| DATE :        | 8/21/2002    | Sheet       | 1            | OF 1        |
| Project Code. | 99.J2477.001 |             |              |             |
| Prepared By   | ANGEL HU     | Reviewed By | DAVID HN LIN | Approved By |
|               | 8/21/2002    |             | 8/21/2002    | H.C.TSOU    |
|               |              |             |              | 8/21/2002   |



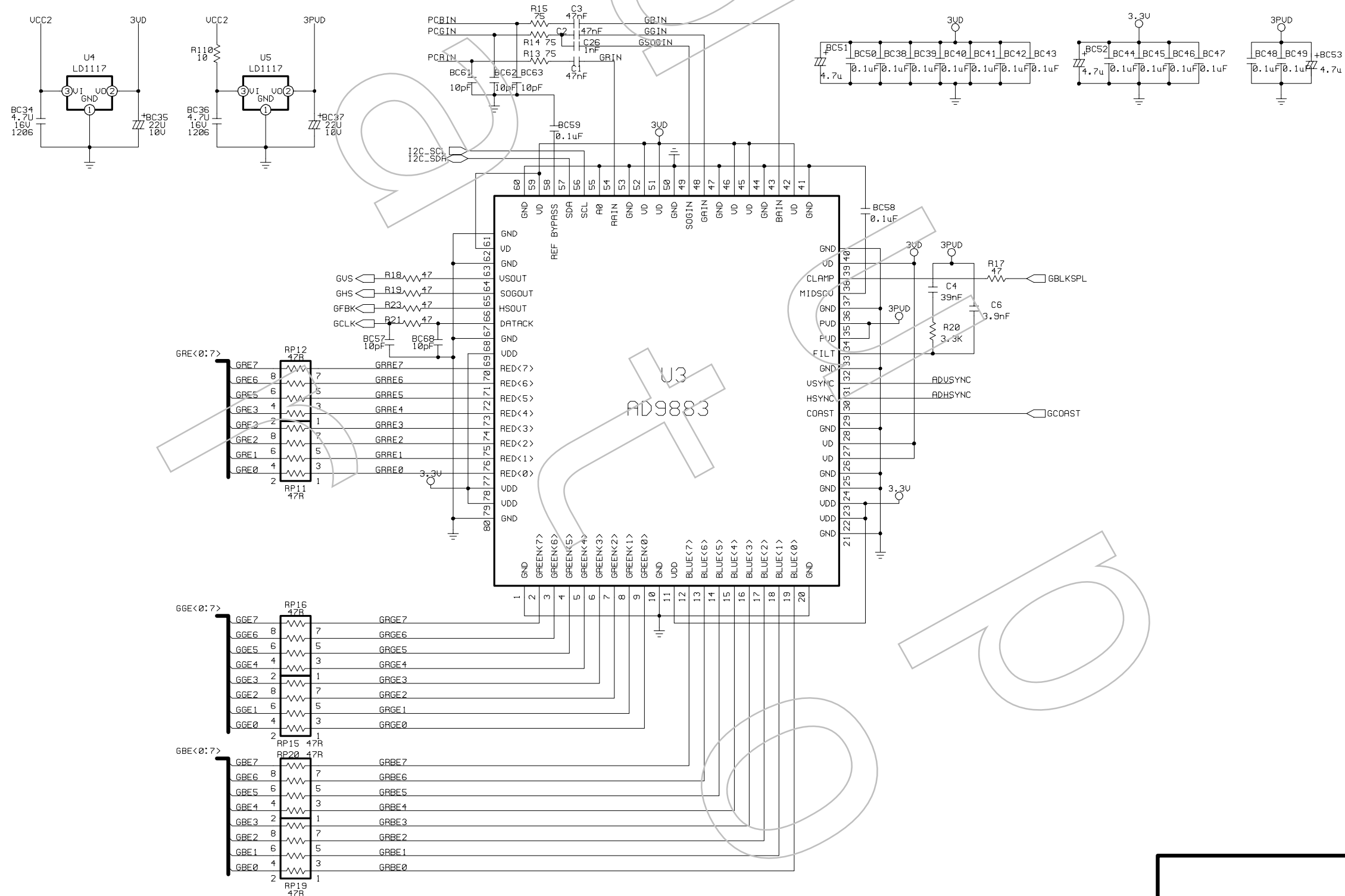


# MAIN BOARD

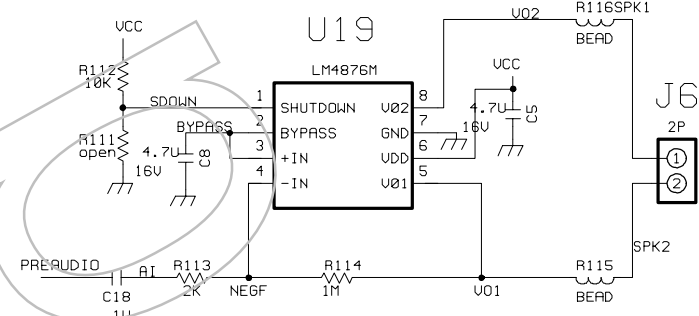
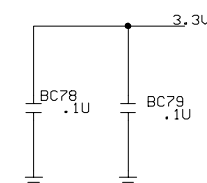
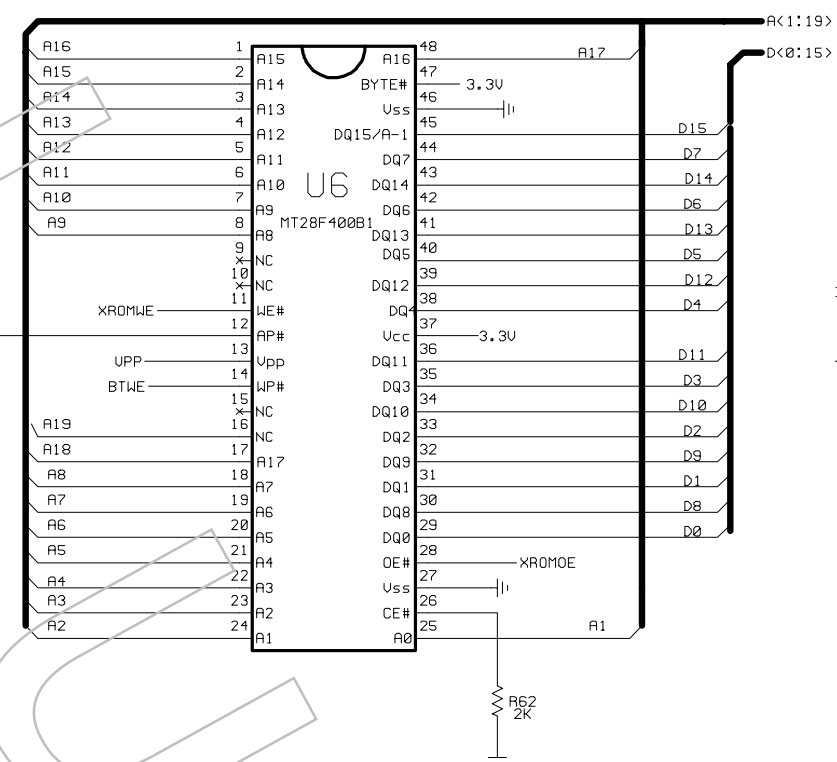
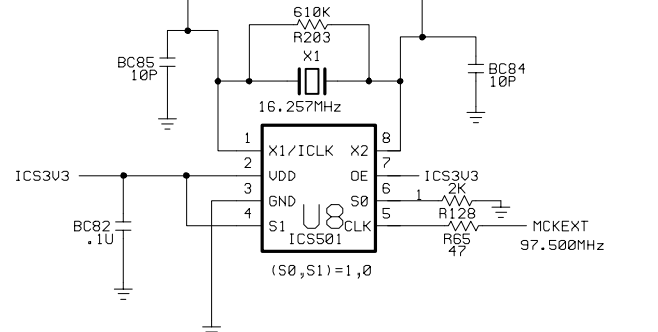
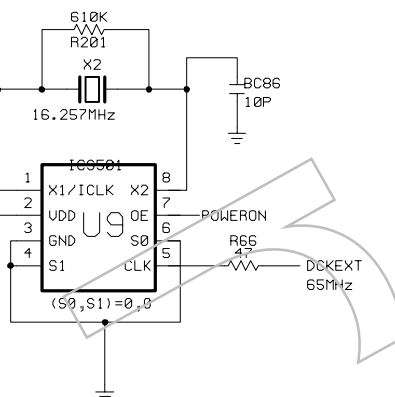
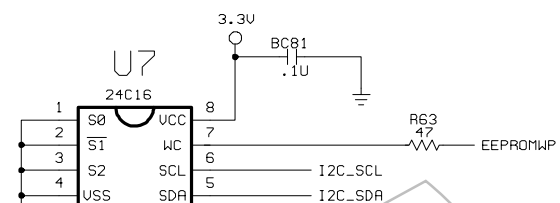


ACERVIEW SL705X SCHEMATIC

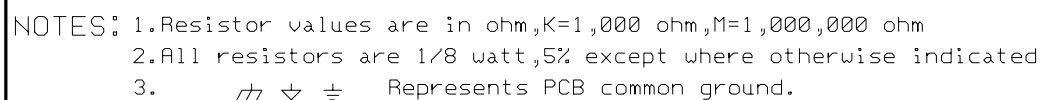
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| DATE :12/05/2001            |              | Sheet 2 OF 6               |                    |                       |
| Project Code : 99.J2477.001 |              |                            |                    |                       |
| Prepared By                 |              | Reviewed By                |                    | Approved By           |
| VICKI CHANG<br>12/05/2001   |              | DAVID HN LIN<br>12/05/2001 |                    | T.S. WU<br>12/05/2001 |



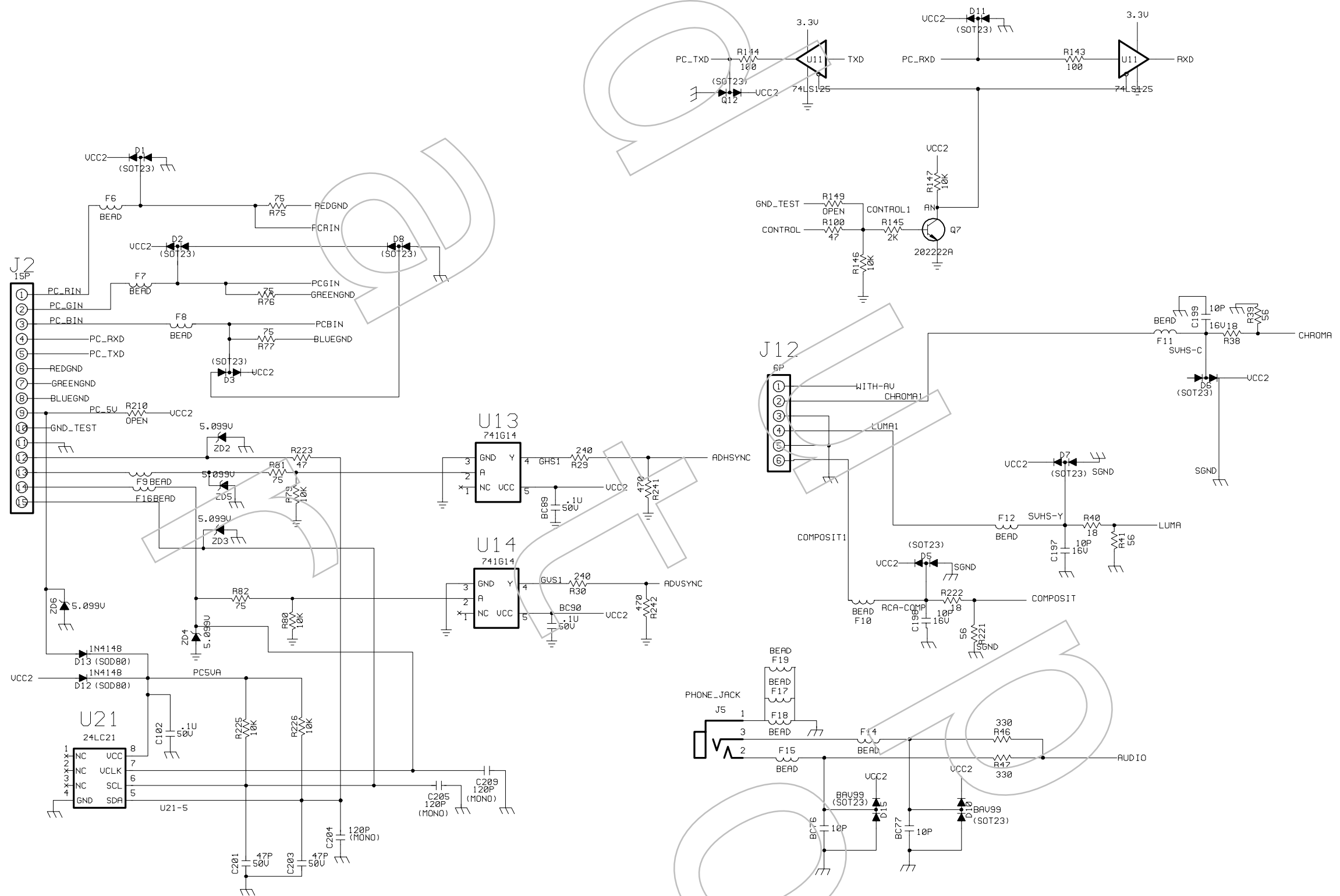
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| DATE :12/05/2001                         |              | Sheet 3 OF 6                              |                    |                                      |
| Project Code : 99.J2477.001              |              |   |                    |                                      |
| Prepared By<br>VICKI CHANG<br>12/05/2001 |              | Reviewed By<br>DAVID HN LIN<br>12/05/2001 |                    | Approved By<br>T.S. WU<br>12/05/2001 |



|                             |              |                            |                    |                       |
|-----------------------------|--------------|----------------------------|--------------------|-----------------------|
| ACERVIEW SL705X SCHEMATIC   |              |                            |                    |                       |
| SIZE<br>A3                  | J2401A00.SCH | FAB<br>A00                 | Doc.No.<br>304-C01 | REV.<br>1             |
| DATE :12/05/2001            |              | Sheet                      | 4                  | OF 6                  |
| Project Code : 99.J2477.001 |              |                            |                    |                       |
| Prepared By                 |              | Reviewed By                |                    | Approved By           |
| UTICKI CHANG<br>12/05/2001  |              | DAVID HN LIN<br>12/05/2001 |                    | T.S. WU<br>12/05/2001 |



|                             |                            |                       |                    |
|-----------------------------|----------------------------|-----------------------|--------------------|
|                             |                            |                       |                    |
| ACERVIEW SL705X SCHEMATIC   |                            |                       |                    |
| SIZE<br>A3                  | J2401A00.SCH               | FAB<br>A00            | Doc.No.<br>304-C01 |
| DATE : 12/05/2001           |                            | Sheet                 | 5 OF 6             |
| Project Code : 99.J2477.001 |                            |                       |                    |
| Prepared By                 | Reviewed By                | Approved By           |                    |
| UICKI CHANG<br>12/05/2001   | DAVID HN LIN<br>12/05/2001 | T.S. WU<br>12/05/2001 |                    |



# ACERVIEW SL705X SCHEMATIC

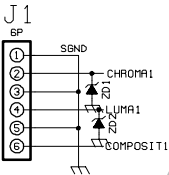
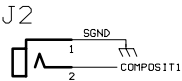
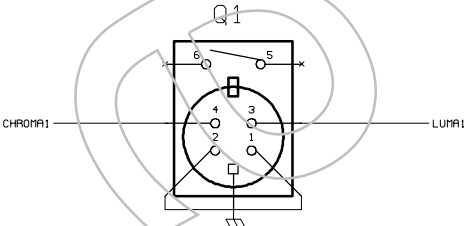
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|                   |              |
|-------------------|--------------|
| DATE : 12/05/2001 | Sheet 6 OF 6 |
|-------------------|--------------|

|                             |
|-----------------------------|
| Project Code : 99.J2477.001 |
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|  |   |                                      |
|--|---|--------------------------------------|
| Prepared By<br>VICKI CHANG<br>12/05/2001 | Reviewed By<br>DAVID HN LIN<br>12/05/2001 | Approved By<br>T.S. WU<br>12/05/2001 |
|--|---|--------------------------------------|

# CONNECTOR BOARD

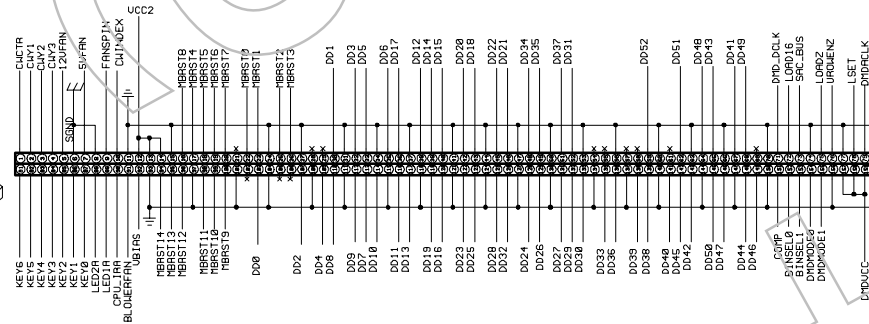


- NOTES: 1. Resistor values are in ohm,  
K=1,000 ohm, M=1,000,000 ohm  
2. All resistors are 1/8 watt, 5%  
except where otherwise indicated  
3.  $\nabla$   $\nabla$   $\nabla$  Represents PCB common ground.

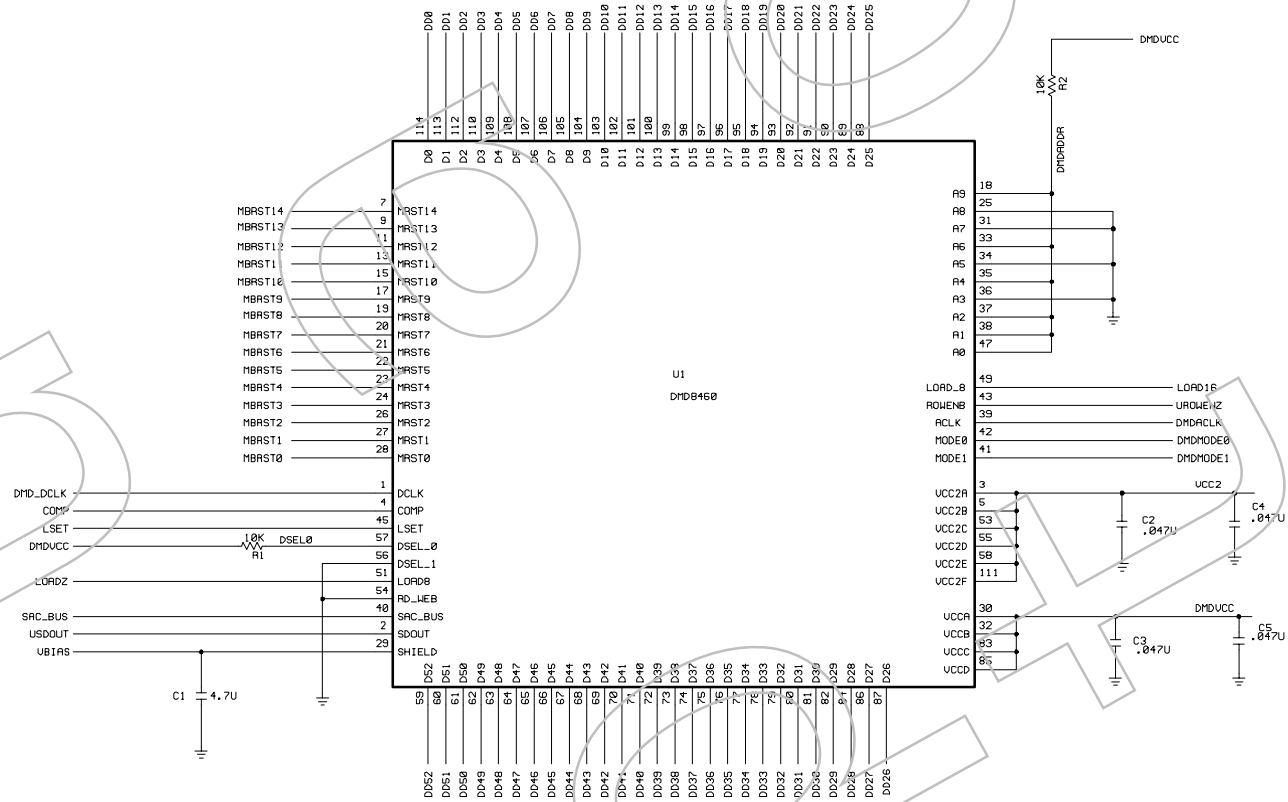
| SL705S CONNECTOR BD SCHEMATICS       |              |   |                    |  |
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| SIZE<br>A3                           | J2404A01.SCH | FAB<br>A01                              | Doc.No.<br>304-C08 | REV.<br>0                                  |
| DATE : 10/3/2002                     |              | Sheet                                   | 1                  | OF 1                                       |
| Project Code. 99.J2577.031           |              |   |                    |  |
| Prepared By<br>ANGEL HU<br>10/3/2002 |              | Reviewed By<br>KELVIN LIAO<br>10/3/2002 |                    | Approved By<br>ERICSSON HUANG<br>10/3/2002 |

# FPCDMD BOARD

J3  
CON-160

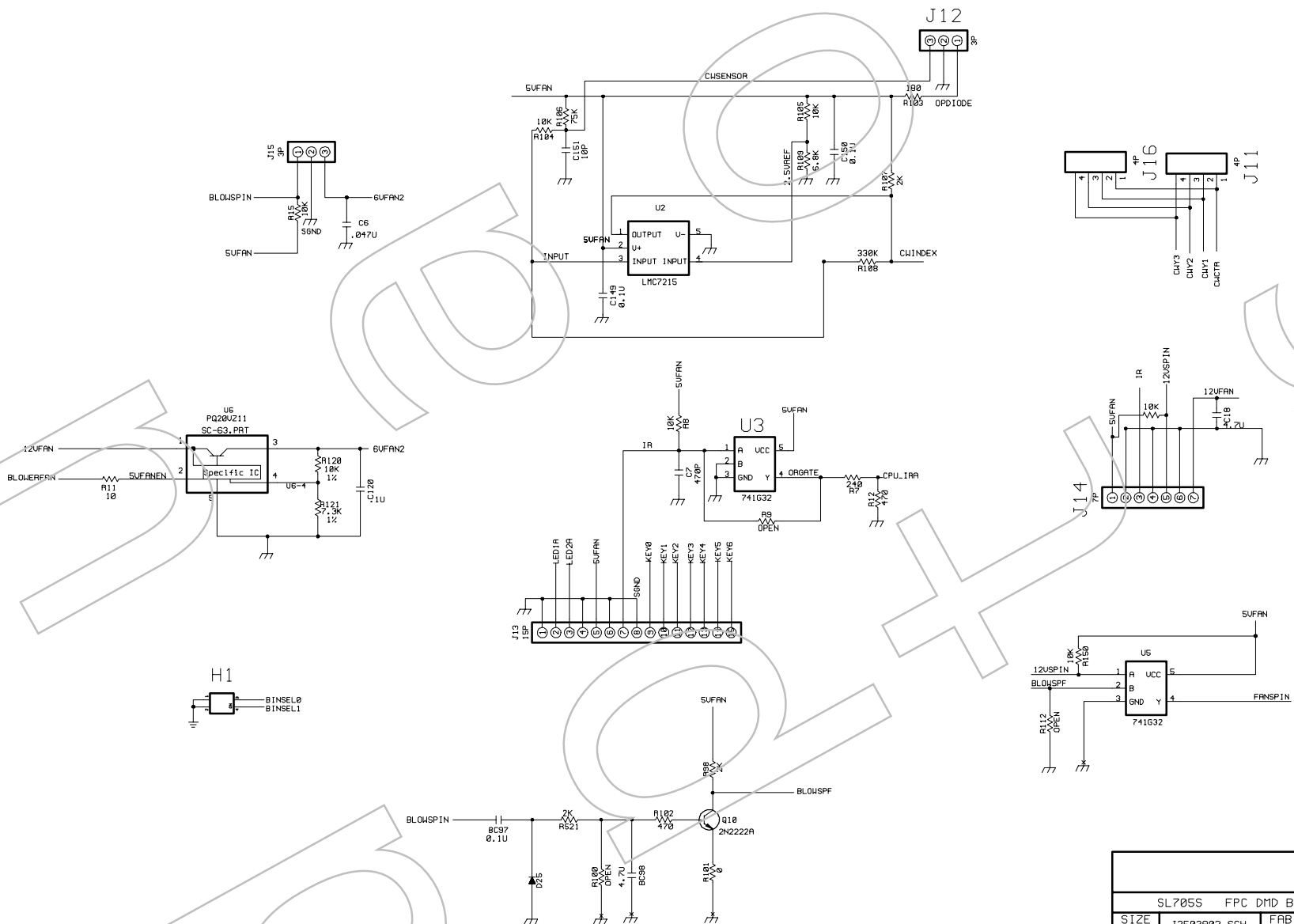


|                                      |              |   |                    |  |
|--------------------------------------|--------------|---|--------------------|--|
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| SL705S FPC DMD BD SCHEMATICS         |              |   |                    |  |
| SIZE<br>A3                           | J2503A02.SCH | FAB<br>A02                              | Doc.No.<br>304-C07 | REV.<br>0                              |
| DATE : 10/3/2002                     |              | Sheet 1 OF 3                            |                    |  |
| Project Code : 99.J2577.001          |              |   |                    |  |
| Prepared By<br>ANGEL HU<br>10/3/2002 |              | Reviewed By<br>KELVIN LIAO<br>10/3/2002 |                    | Approved By<br>ANDREW TAN<br>10/3/2002 |



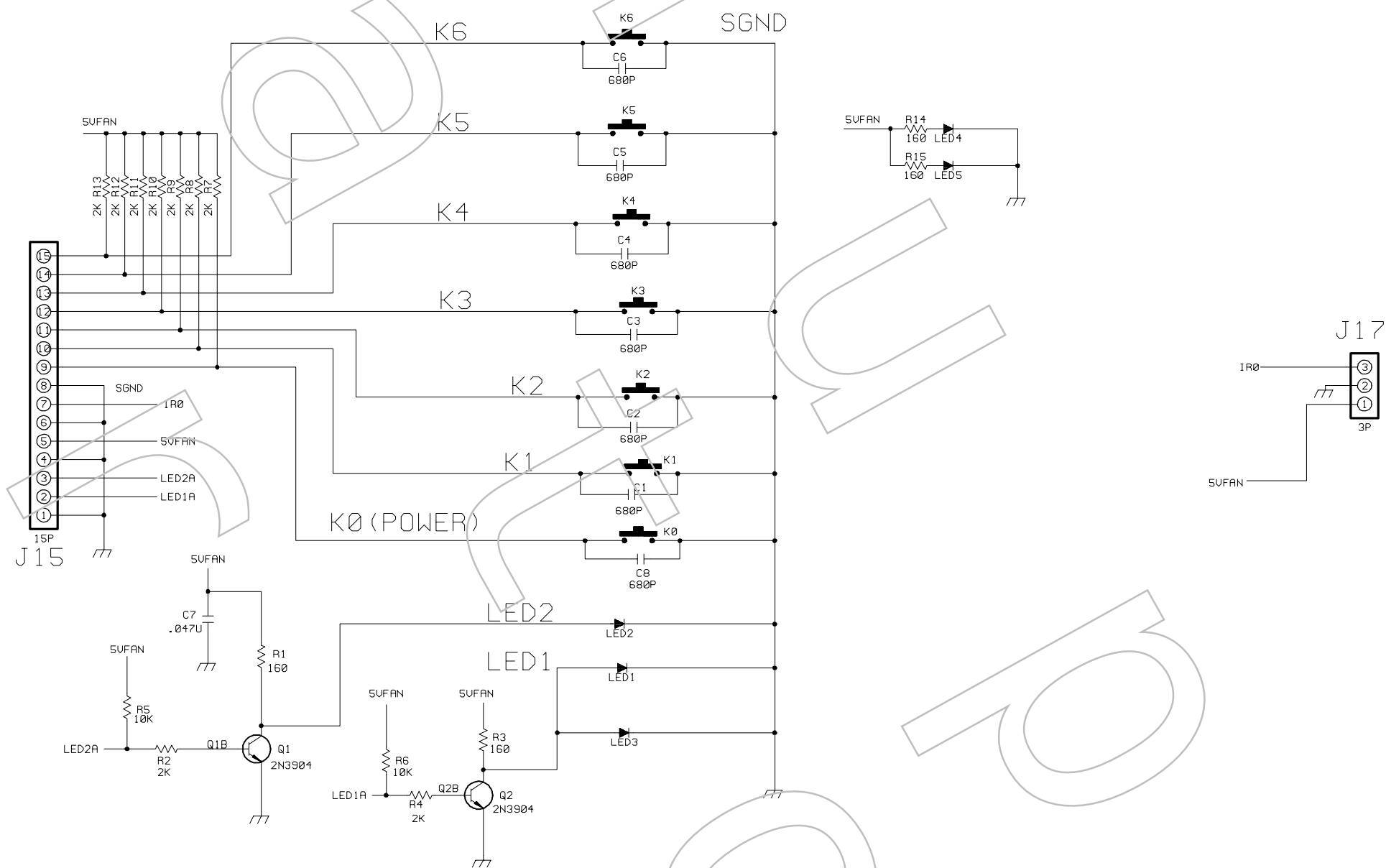
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| A3                          |              | A02         | 304-C07 | 0    |
| DATE : 10/3/2002            |              | Sheet       | 2       | OF 3 |
| Project Code : 99.J2577.001 |              |             |         |      |
| Prepared By                 | Reviewed By  | Approved By |         |      |
| ANGEL HU                    | KELVIN LIAO  | ANDREW TAN  |         |      |
| 10/3/2002                   | 10/3/2002    | 10/3/2002   |         |      |



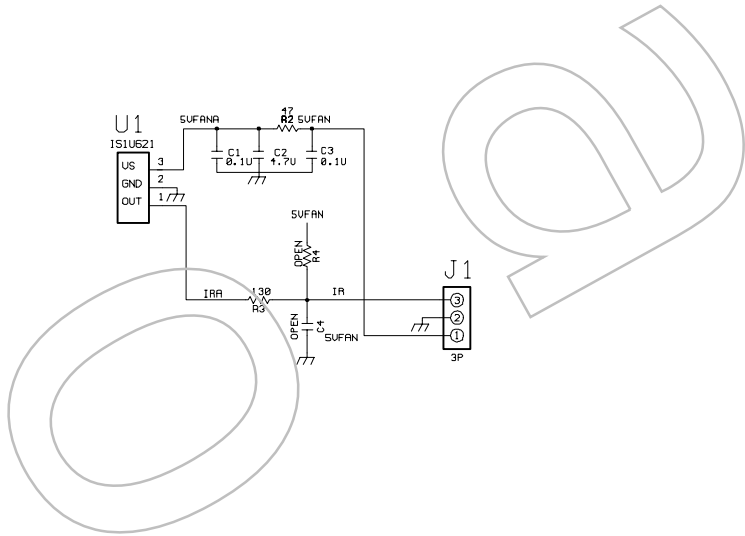


| SL7055 FPC DMD BD SCHEMATICS         |   |  |                    |
|--------------------------------------|---|--|--------------------|
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| DATE : 10/3/2002                     | Sheet 3                                 | OF 3                                   | REV.<br>0          |
| Project Code : 99.J2577.001          |   |  |                    |
| Prepared By<br>ANGEL HU<br>10/3/2002 | Reviewed By<br>KELVIN LIAO<br>10/3/2002 | Approved By<br>ANDREW TAN<br>10/3/2002 |                    |

KEYPAD BOARD 48.J1305.A10

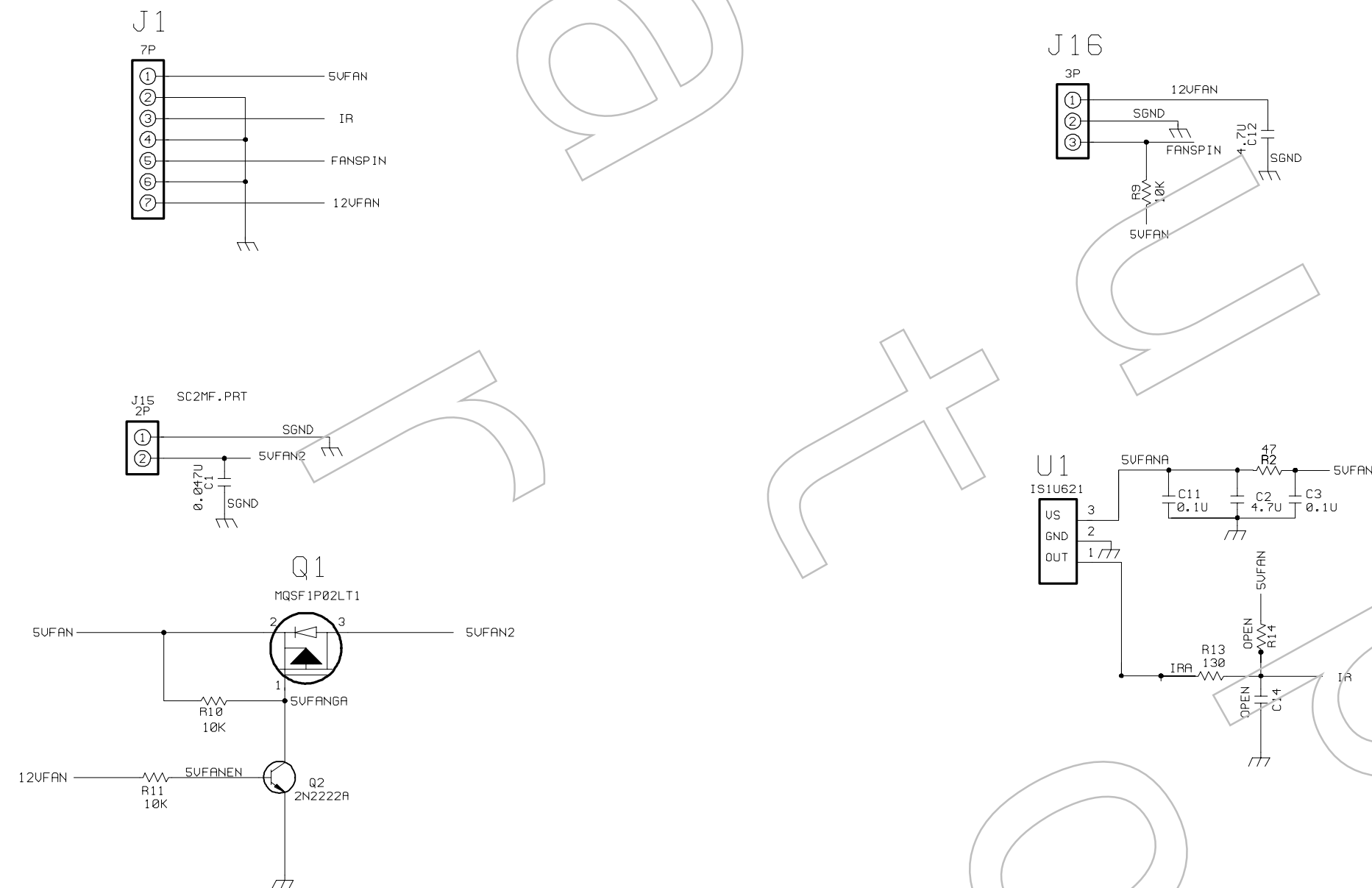


|                             |              |                          |                    |                         |
|-----------------------------|--------------|--------------------------|--------------------|-------------------------|
| ACERVIEW SL700X SCHEMATIC   |              |                          |                    |                         |
| SIZE<br>A3                  | J1305A10.SCH | FAB<br>A10               | Doc.No.<br>304-C03 | REV.<br>2               |
| DATE : 2/16/2001            |              | Sheet                    | 1                  | OF 1                    |
| Project Code : 99.J1377.001 |              |                          |                    |                         |
| Prepared By                 |              | Reviewed By              |                    | Approved By             |
| CHRIS PENG<br>2/16/01       |              | BILL WJ CHANG<br>2/16/01 |                    | MICHAEL GOAN<br>2/16/01 |



|                             |              |                       |                          |           |
|-----------------------------|--------------|-----------------------|--------------------------|-----------|
|                             |              |                       |                          |           |
| ACERVIEW SL700X SCHEMATIC   |              |                       |                          |           |
| SIZE<br>A3                  | J1307S04.SCH | FAB<br>S4             | Doc.No.<br>304-C04       | REV.<br>1 |
| DATE : 12/20/2000           |              | Sheet 1 OF 1          |                          |           |
| Project Code : 99.J1377.001 |              |                       |                          |           |
| Prepared By                 |              | Reviewed By           | Approved By              |           |
| CHRIS PENG<br>12/20/00      |              | BEEN CHEN<br>12/20/00 | MICHAEL GOAN<br>12/28/00 |           |

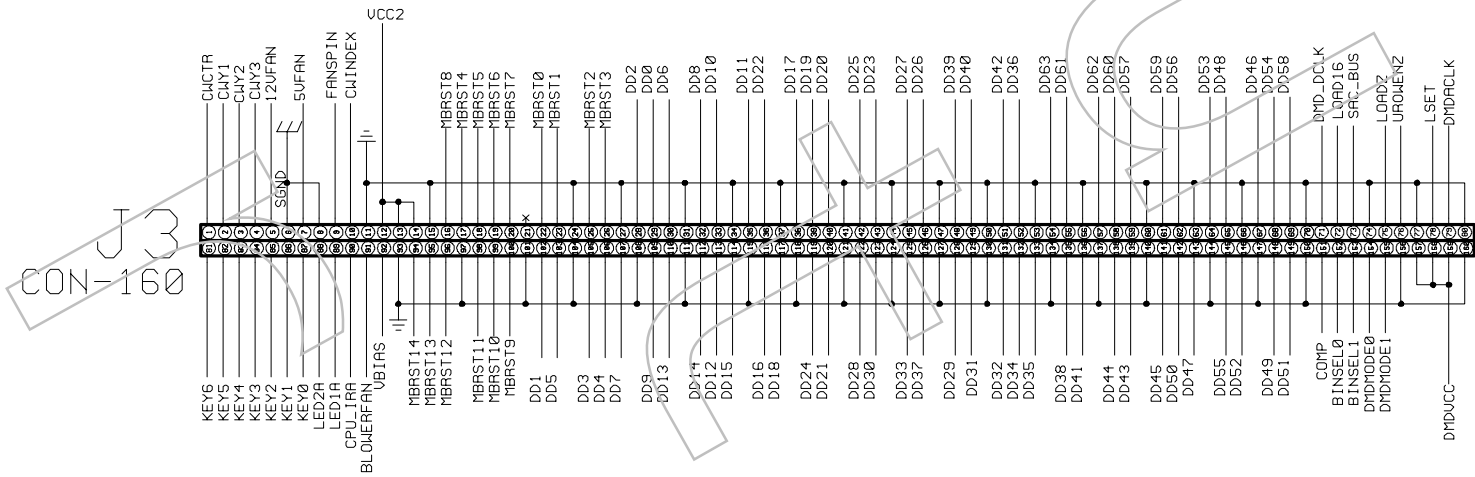
# J1307S12 CONNECTOR BOARD



NOTES:  
1. Resistor values are in ohm, K=1,000 ohm, M=1,000,000 ohm  
2. All resistors are 1/8 watt, 5% except where otherwise indicated  
3.  $\nabla$   $\nabla$   $\nabla$  Represents PCB common ground.

|                            |              |                         |                    |                            |
|----------------------------|--------------|-------------------------|--------------------|----------------------------|
|                            |              |                         |                    |                            |
| ACERVIEW SL700X SCHEMATICS |              |                         |                    |                            |
| SIZE<br>A3                 | J1307S12.SCH | FAB<br>S2               | Doc.No.<br>304-C06 | REV.<br>0                  |
| DATE : 12/19/2000          |              | Sheet 1 OF 1            |                    |                            |
| Project Code. 99.J1377.001 |              |                         |                    |                            |
| Prepared By                |              | Reviewed By             |                    | Approved By                |
| Chris Peng<br>11/26/2000   |              | Been Chen<br>11/26/2000 |                    | Micheal Goan<br>11/26/2000 |

# FPCMD BOARD



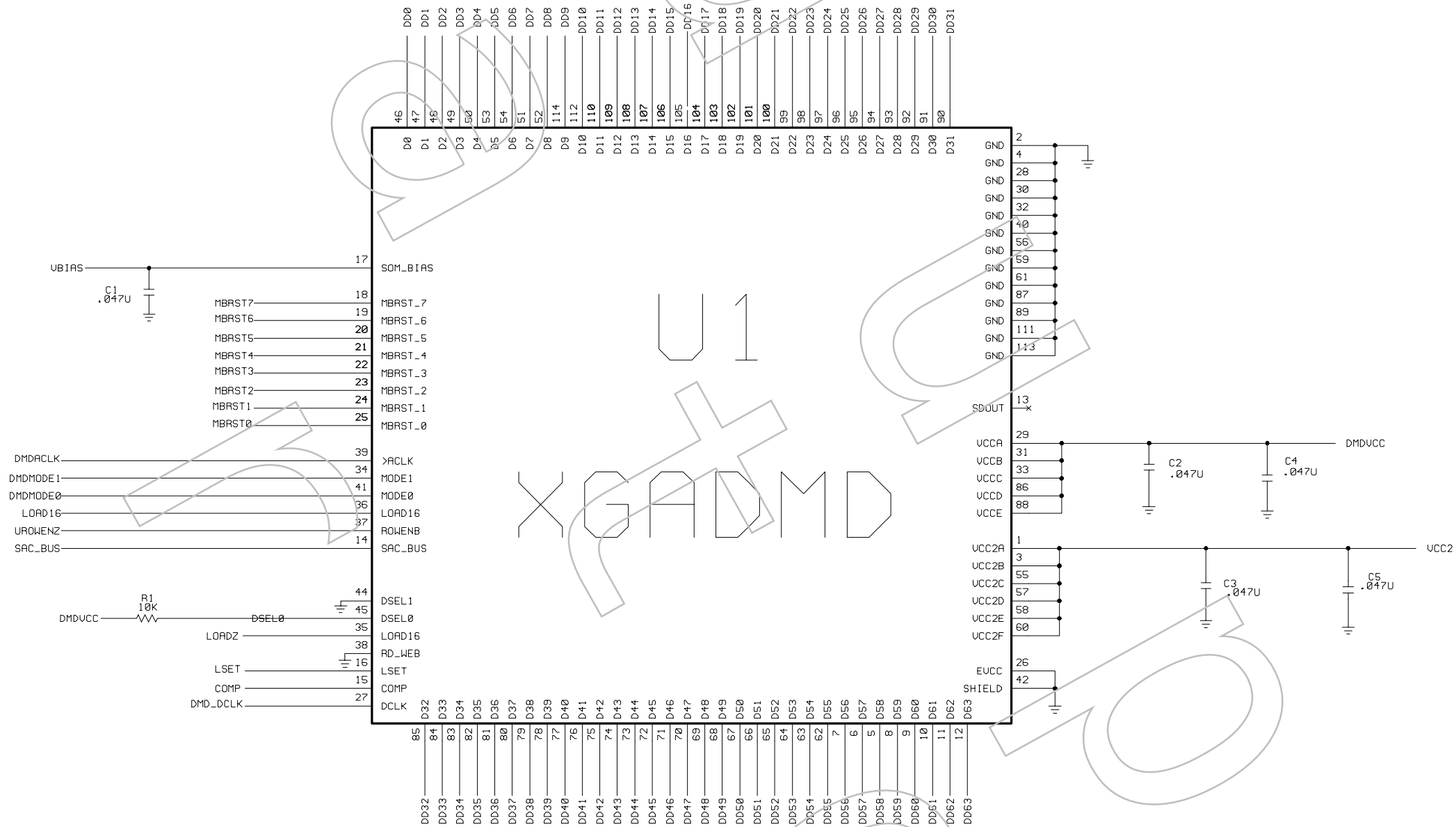
ACERVIEW SL700X SCHEMATIC

|            |              |            |                    |           |
|------------|--------------|------------|--------------------|-----------|
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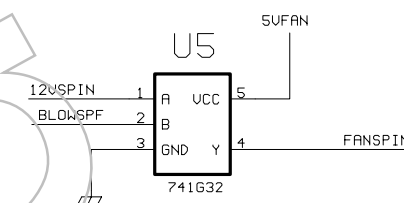
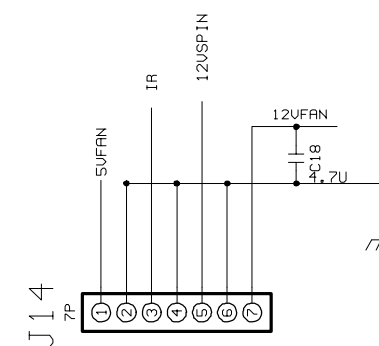
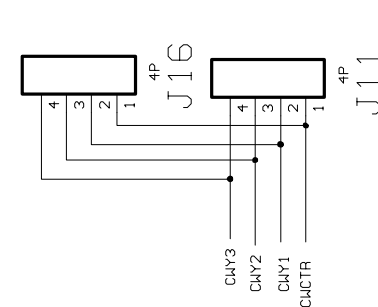
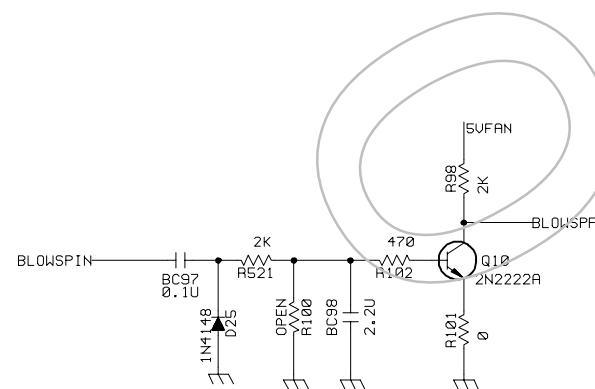
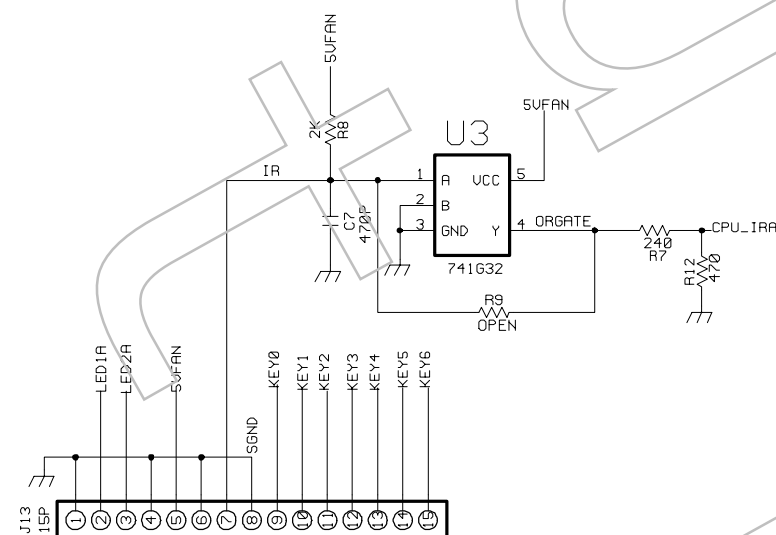
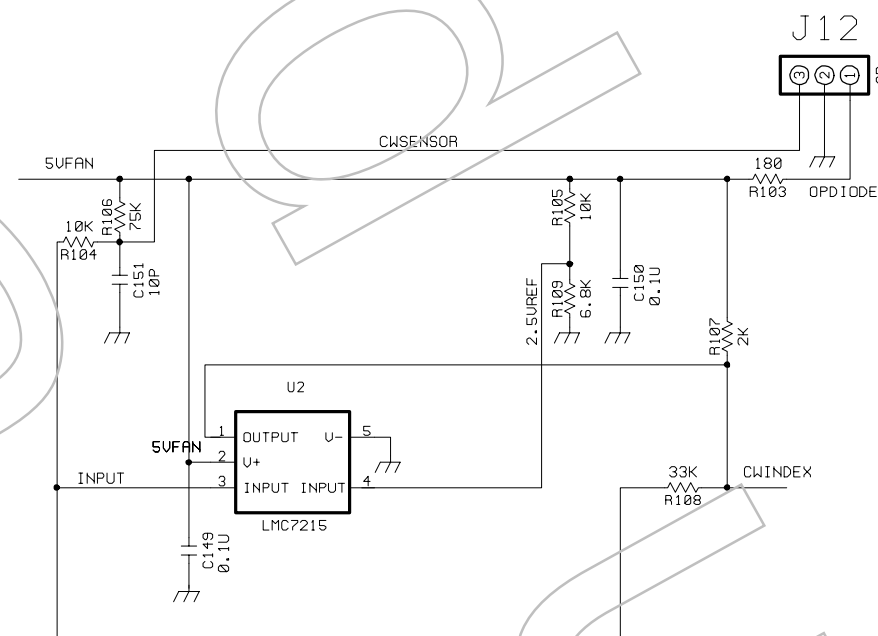
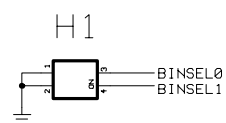
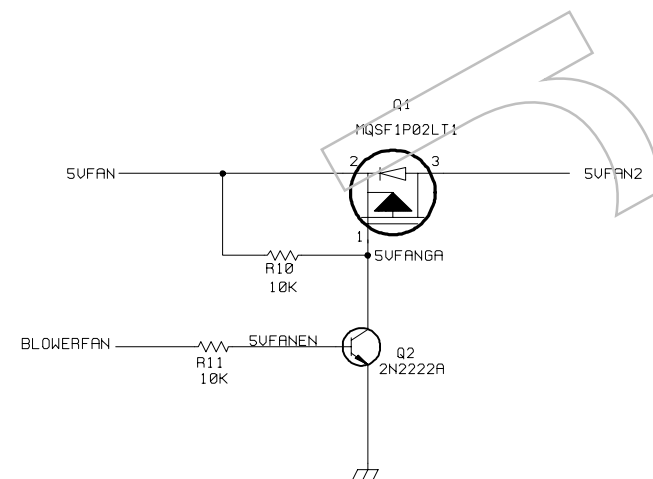
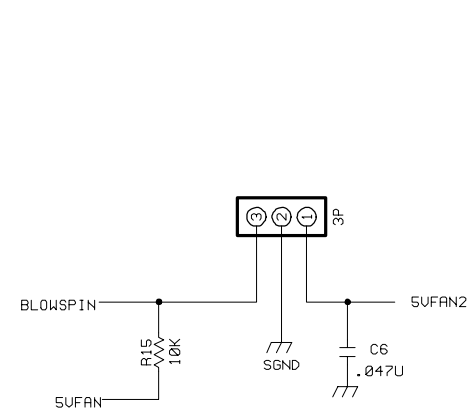
|                  |              |
|------------------|--------------|
| DATE : 8/14/2001 | Sheet 1 OF 3 |
|------------------|--------------|

Project Code : 99.J1377.001

|   |                                      |  |
|---|--------------------------------------|--|
| Prepared By<br>VICKI CHANG<br>8/14/2001 | Reviewed By<br>JOHN LIN<br>8/14/2001 | Approved By<br>ERICSSON HUANG<br>8/14/2001 |
|---|--------------------------------------|--|

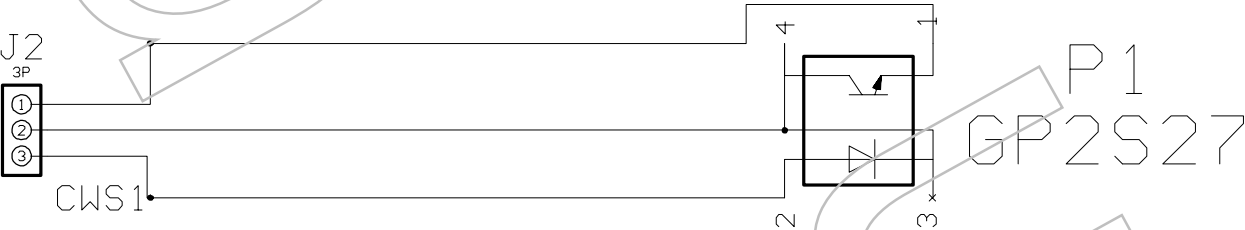


|   |              |                                       |                    |  |
|---|--------------|---------------------------------------|--------------------|--|
|   |              |                                       |                    |  |
| ACERVIEW SL700X SCHEMATIC               |              |                                       |                    |  |
| SIZE<br>A3                              | J1317S02.SCH | FAB<br>S02                            | Doc.No.<br>304-C11 | REV.<br>0                                  |
| DATE : 8/14/2001                        |              | Sheet 2 OF 3                          |                    |  |
| Project Code : 99.J1377.001             |              |                                       |                    |  |
| Prepared By<br>VICKI CHANG<br>8/14/2001 |              | Reviewed By<br>JOHN LILN<br>8/14/2001 |                    | Approved By<br>ERICSSON HUANG<br>8/14/2001 |



|   |              |                                      |                    |  |
|---|--------------|--------------------------------------|--------------------|--|
|   |              |                                      |                    |  |
| ACERVIEW SL700X SCHEMATIC               |              |                                      |                    |  |
| SIZE<br>A3                              | J1317S02.SCH | FAB<br>S02                           | Doc.No.<br>304-C11 | REV.<br>0                                  |
| DATE : 8/14/2001                        |              | Sheet 3 OF 3                         |                    |  |
| Project Code : 99.J1377.001             |              |                                      |                    |  |
| Prepared By<br>VICKI CHANG<br>8/14/2001 |              | Reviewed By<br>JOHN LIN<br>8/14/2001 |                    | Approved By<br>ERICSSON HUANG<br>8/14/2001 |

CW SENSOR FPC CABLE 48.J1313.S01



|                                      |   |  |                    |           |
|--------------------------------------|---|--|--------------------|-----------|
| ACERVIEW SL700X SCHEMATIC            |   |  |                    |           |
| SIZE<br>A3                           | J1313S01.SCH                            | FAB<br>S1                              | Doc.No.<br>304-C09 | REV.<br>0 |
| DATE : 2/16/2001                     |   | Sheet                                  | 1                  | OF 1      |
| Project Code : 99.J1377.001          |   |  |                    |           |
| Prepared By<br>CHRIS PENG<br>2/16/01 | Reviewed By<br>BILL WJ CHANG<br>2/16/01 | Approved By<br>MICHAEL GOAN<br>2/16/01 |                    |           |



## Appendix

### Appendix A Factory Menu

#### A. How to enter factory menu:

- I. Press keypad **<Exit>** key for 3 sec enter “Lamp Hour Info” layer (**Fig-1**).
- II. Press keypad **<Source>** and **<Auto>** key simultaneously, then enter Factory menu.

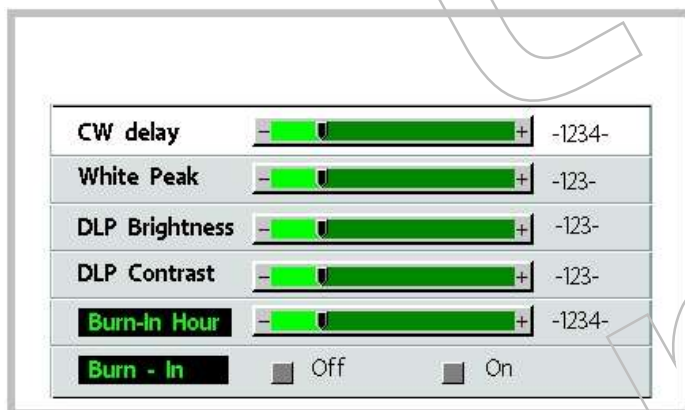


(Fig-1) Lamp Hours Info

#### B. Factory layer:

##### I. DMD layer (Fig-2):

1. **CW delay:** adjust color wheel delay.
2. **White peak:** adjust DMD white peak. In PC mode default value set **10**, in Video mode is **0**. Software auto set this value as source find.
3. **DLP Brightness:** adjust DLP Brightness. default setting is **32**. Do not change this value as possible.
4. **DLP Contrast:** adjust DLP Contrast. Default setting is **36**. Do not change this value as possible.
5. **Burn-In Hour:** set how many hours to burn-in. You can enable burn-in on next selection.
6. **Burn-In:** after you set burn-in hours, set this selection to **On** and system will going to burn-in immediately. You can see color change (red, green, blue, black, white) on screen in turn. System will auto close down when burn-in hour count down to 0 and burn-in complete. (You can also cancel burn-in sequence by set this selection to **Off**).



(Fig-2) DMD layer

## II. ADC layer (Fig-3): (only available when input source is analog RGB)

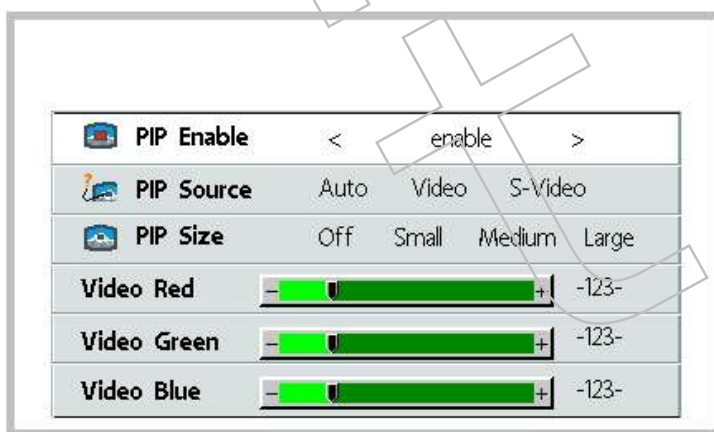
1. **ADC Brightness:** ADC brightness auto calibration black.
2. **ADC Contrast:** ADC contrast auto calibration white.
3. **ADC Offset RGB:** value to tell you calibrate result.
4. **ADC Gain RGB:** value to tell you calibrate result.
5. **Fac Brightness:** adjust default brightness value in source PC.
6. **Fac Contrast:** adjust default contrast value in source PC.



(Fig-3) ADC layer

## III. Color layer (Fig-4):

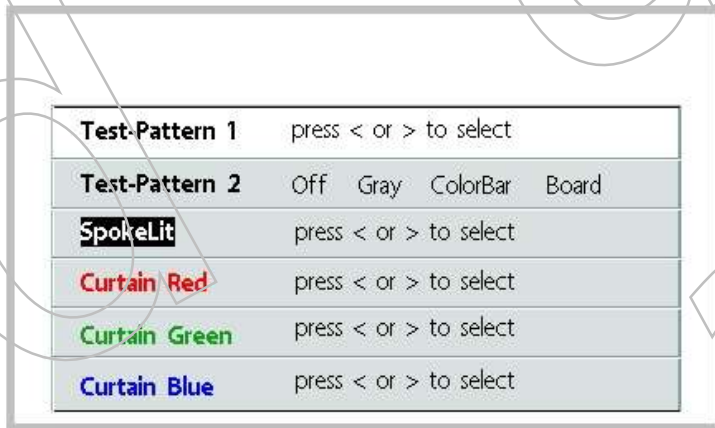
1. **PIP Enable:** enable pip when input source is Ypbpr.
2. **PIP Source:** select pip source when input source is Ypbpr.
3. **PIP Size:** select pip size when input source is Ypbpr.
4. **Video Red, Green, and Blue:** tell you color temperature (in Video, Svideo, Ypbpr) default value as user menu "color temp" selection set 0. (Only available when input source is any Video)



(Fig-4) ColorTemp layer

#### IV. Optic layer (Fig-5):

1. **Test Pattern:** system auto produce pattern for engineer test.
2. **Spoke light:** unit display full white.
3. **Curtain Red:** unit display full color red.
4. **Curtain Green:** unit display full color green.
5. **Curtain Blue:** unit display full color blue.



|                |                         |
|----------------|-------------------------|
| Test-Pattern 1 | press < or > to select  |
| Test-Pattern 2 | Off Gray ColorBar Board |
| SpokeLit       | press < or > to select  |
| Curtain Red    | press < or > to select  |
| Curtain Green  | press < or > to select  |
| Curtain Blue   | press < or > to select  |

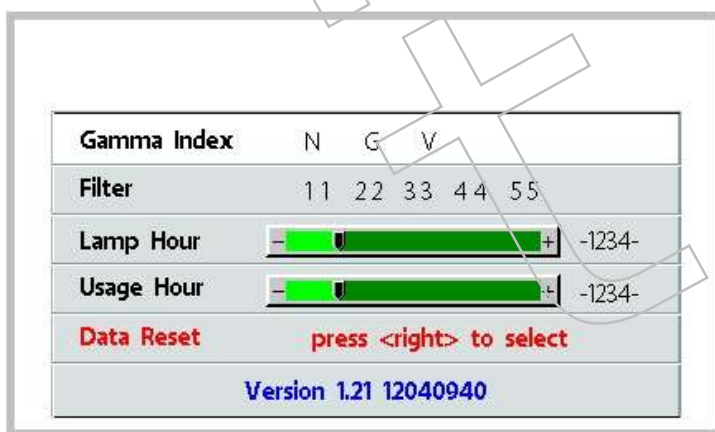
(Fig-5) Optic layer



#### V. Lamp layer (Fig-6):

1. **Gamma index:** DLP Gamma index, system auto select.
2. **Filter:** system auto select Filter.
3. **Lamp Hour:** value to tell you lamp usage hours.
4. **Usage Hour:** value to tell you unit usage hours.
5. **Data Reset:** Reset all data to default include factory assign value.

**Never try to reset all data.**

6. **Version:** software version.

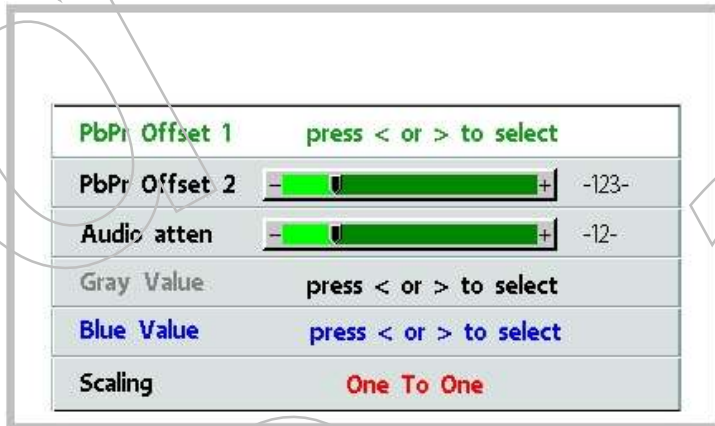


|                       |  |
|-----------------------|--|
| Gamma Index           | N G V  |
| Filter                | 11 22 33 44 55   |
| Lamp Hour             |  -1234- |
| Usage Hour            |  -1234- |
| Data Reset            | press <right> to select  |
| Version 1.21 12040940 |  |

(Fig-6) Lamp layer

## VI. YPbPr layer (Fig-7):

1. **PbPr Offset 1,2:** adjust source YPbPr black level. When YPbPr Display color seems too green or purple. You can modulate here.(only available when input source is YPbPr)
2. **Audio atten:** adjust default volume level.
3. **Gray value:** adjust here to check DMD fail pixel.
4. **Blue value:** adjust here to check DMD fail pixel.
5. **Scaling:** tell you what scaling mode is using now.



(Fig-7) YPbPr layer

## Appendix B Firmware Down Load Procedure

### ● Applied models

RD-JT20

RD-JT21

### ● Materials needed

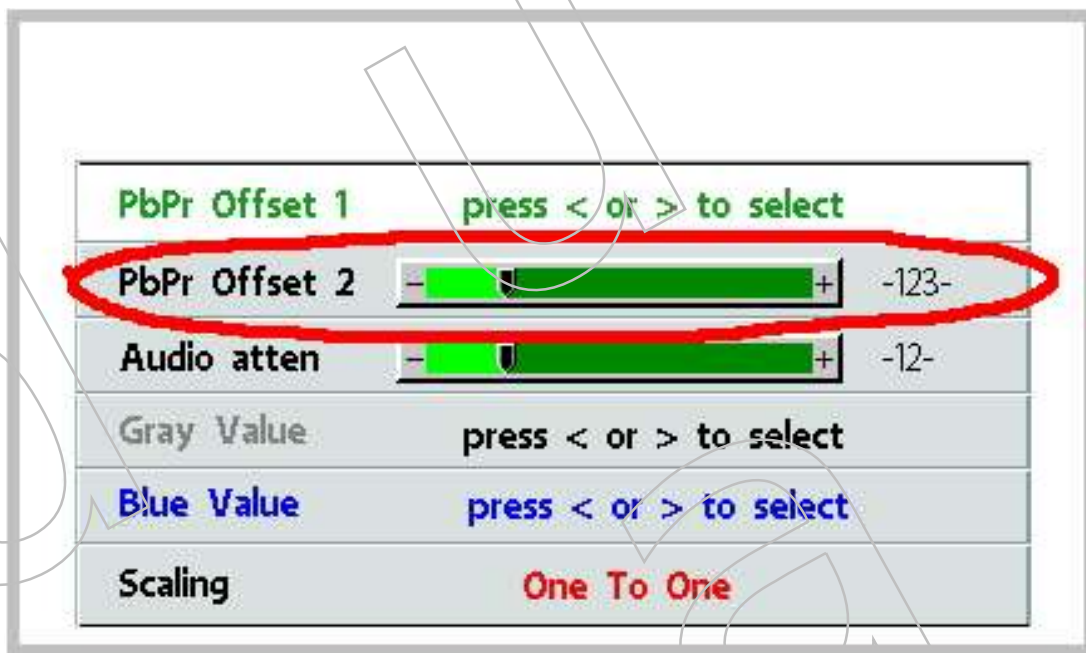
1. Download cable (full ping D-SUB P/N : 50.J2402.001)
2. Download board ( P/N : 55.J1316.001 )
3. Adaptor for Download BD ( P/N : 25.11012.001 )  
& Power Cord ( P/N : 27.01818.000 )
4. Download line ( P/N : 50.J0510.5D1 )  
(Cable/RS232D MD8PM/DS9PF 1800MM )
5. DVD player with YPbPr (Progressive) output
6. Chroma pattern generator
7. Personal computer or Notebook
8. Software

### ● Software download procedure

1. Record upgrade unit factory page 1 “**CW delay**” value.





- Record upgrade unit factory page 1 “**PbPr Offset 2**” value.



- Power off the RD-JT20/RD-JT21 unit and unplug power cord.
- Prepare the download materials (download line one side connect to pc or notebook COM2, another side connect to download board. Plug download board power. Connect download cable to download board)
- Connect download cable (D-Sub) to RD-JT20/RD-JT21 unit (make sure you have already unplug power cord)
- Now we are setup the hardware and ready to downloading.
- Open file where you put upgrade software. Execute “FlashUpgrader.exe” and press next icon till following image display (You must sure which COM you used to download, default setting using COM2)



8. Now plug the RD-JT20/RD-JT21 unit's power cord, you should see the download progress running in upgrade wizard screen. Download complete message appear as download finish, and then we are done. (If download progress break down as it running, unplug unit's power cord and restart from procedure 7)
9. Download is complete. We have to write factory value back .Now power up the unit and connect it to "Chroma pattern generator". Please set pattern generator to timing "1024X768 60Hz" and pattern "32 gray". Enter the factory OSD page 2(as blow) and execute "ADC Brightness","ADC Contrast". Then row3 and row4 value changed. (Notice: "ADC Brightness" value limited from 50 to 75, "ADC Contrast" value limited from 140 to 190)

|                |  |       |       |
|----------------|--|-------|-------|
| ADC Brightness | press <right> to Calibration   |       |       |
| ADC Contrast   | press <right> to Calibration   |       |       |
| ADC Offset RGB | -123-  | -123- | -123- |
| ADC Gain RGB   | -123-  | -123- | -123- |
| Fac Brightness |    |       | -123- |
| Fac Contrast   |  |       | -123- |

10. Write "CW delay","PbPr Offser 2" value back.
11. DONE!!

## ● Verify

1. Check factory OSD page4 version.
2. Connect DVD player YPbPr output to upgraded unit see the movies color is right.(if not, adjust "PbPr Offser 2" )
3. Check if every DVD could normally display.

## ● Software files

1. FlasherUpgrade.exe
2. pwSDK.inf
3. romcode.hex
4. configdata.hex
5. gui.hex
6. flasher.hex



# Firmware Download Tools (P/N: 60.J1346.001)

Paperback D-sub  
( SL700X PC/HDTV Port )



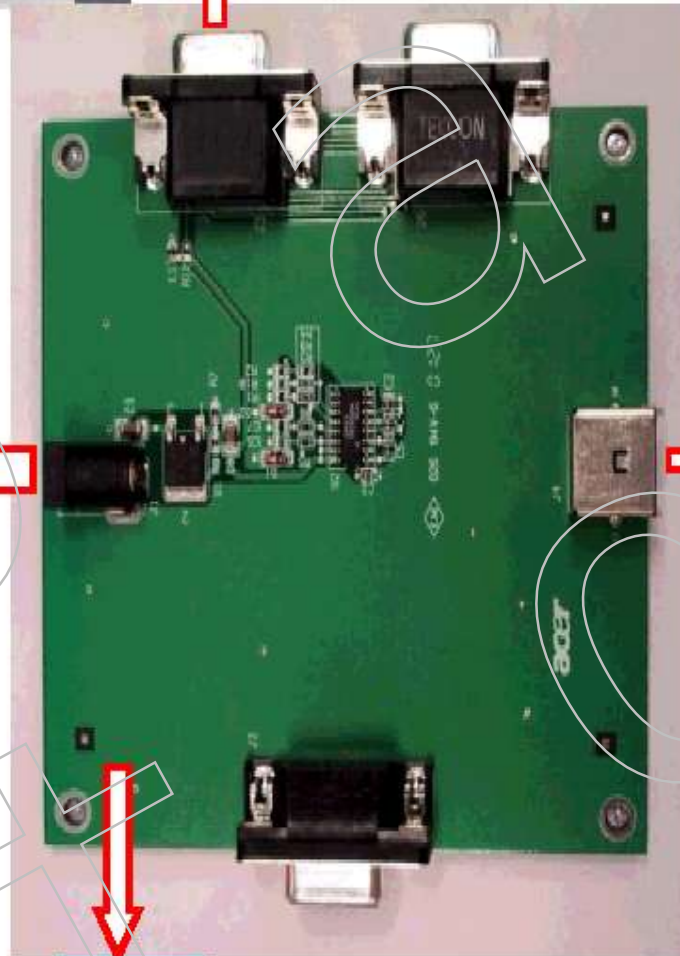
WIRE D-sub 15/15P  
P/N : 50.J2402.001

Power Cord P/N : 27.01818.000

Adapter output 12V P/N : 25.11012.001

Download BD

P/N : 55.J1316.001



PC / Notebook  
RS232 PORT

DOWNLOAD CABLE

P/N : 50.J0510.5D1



## Appendix C Disassembly of Service Point

Names of each part

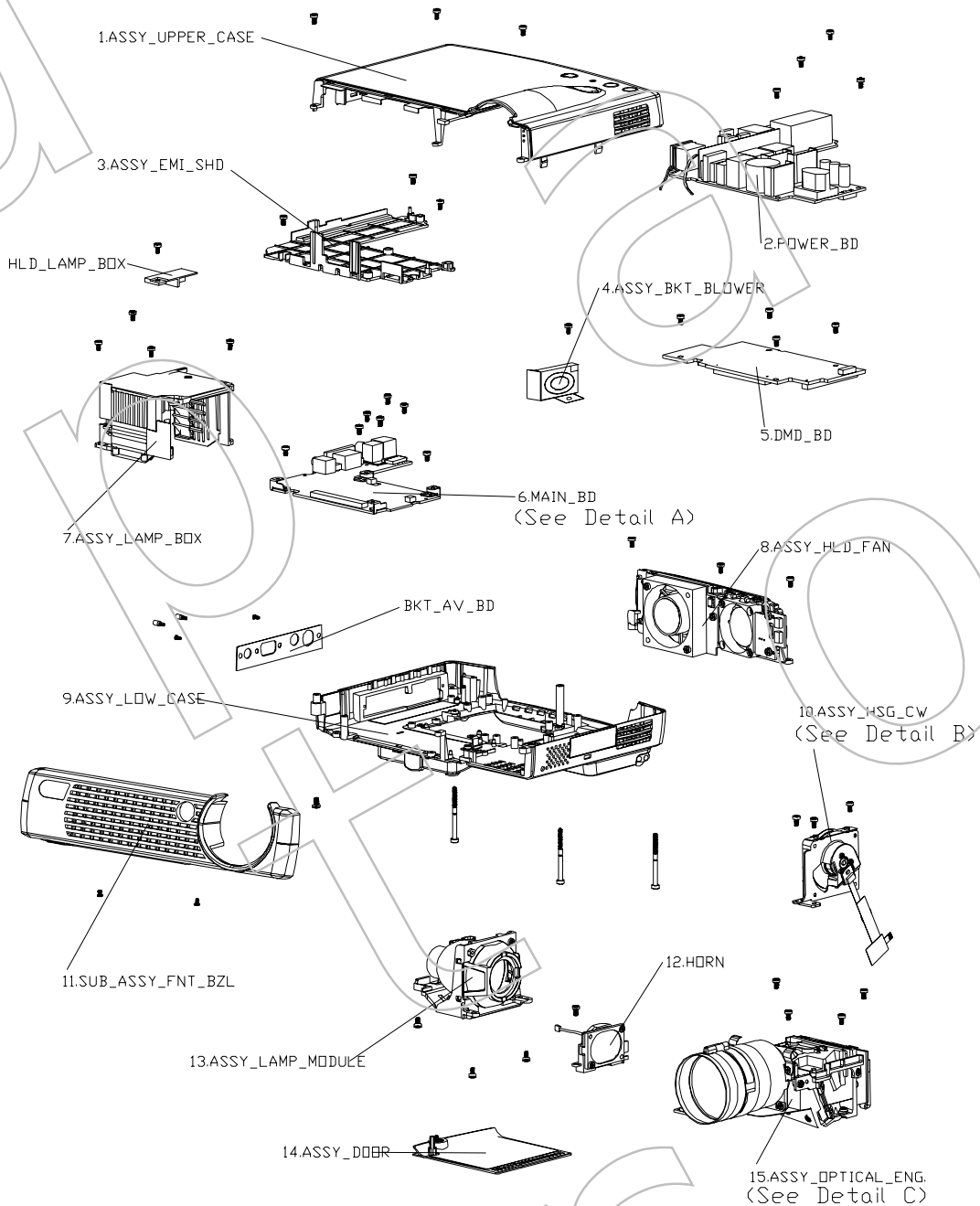
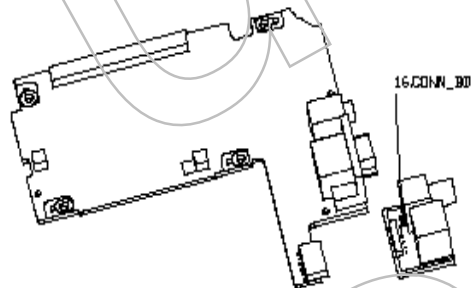


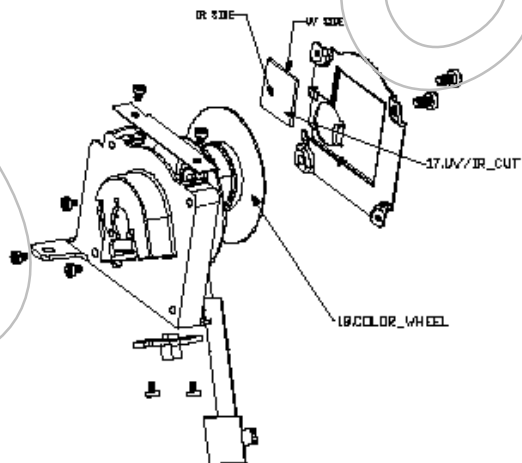
Fig.1

## Disassembly of ASSY\_MAIN\_BD



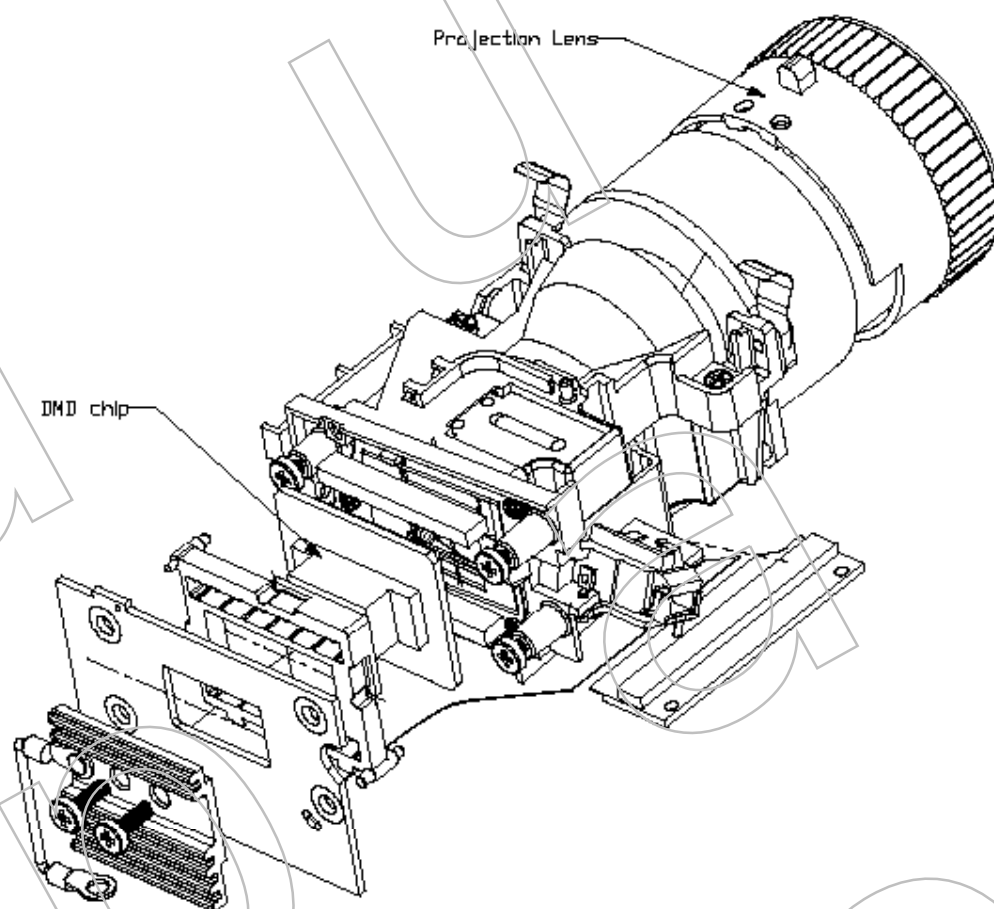
**Detail A**

## Disassembly of ASSY\_HSG\_CW



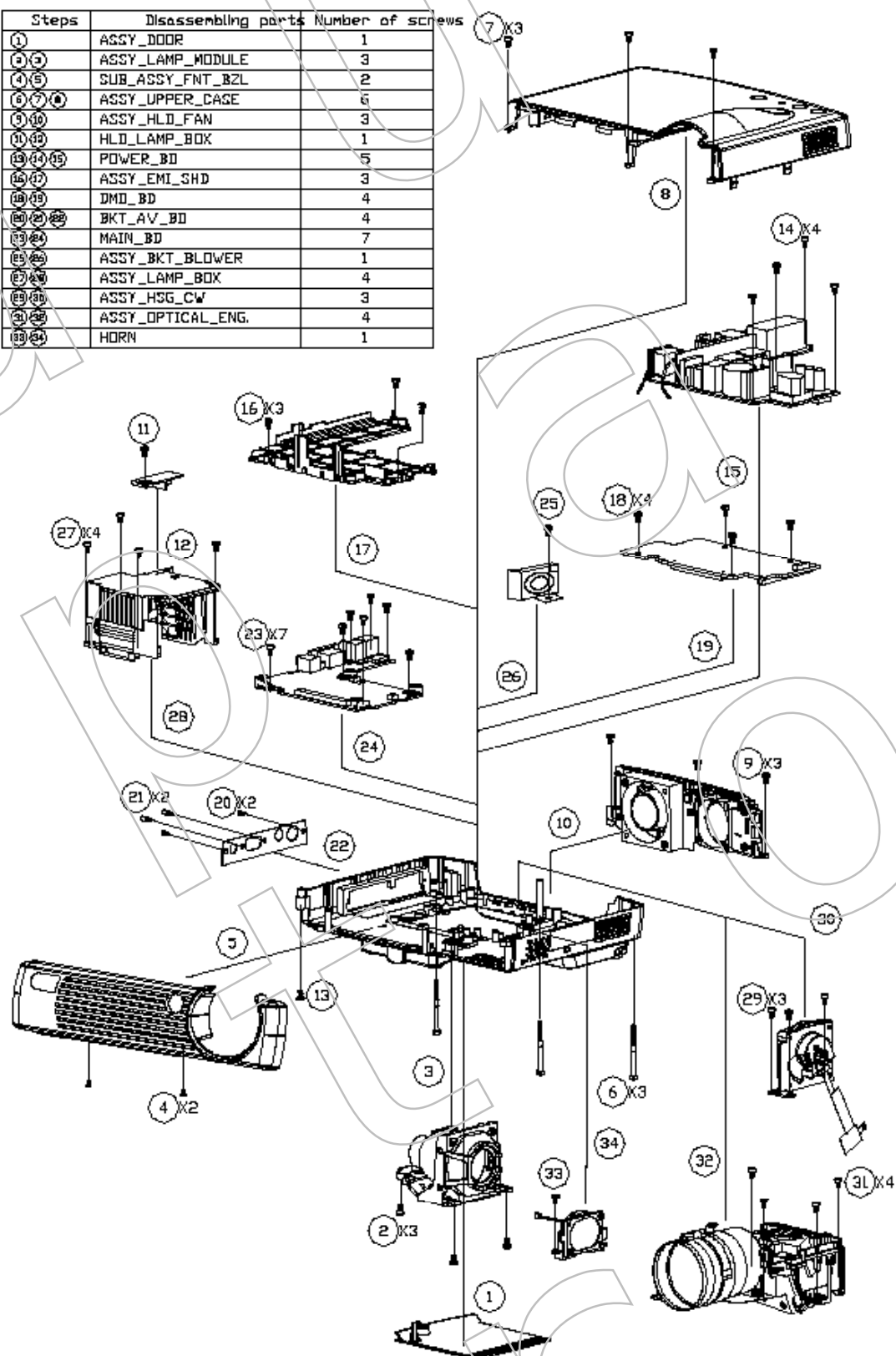
**Detail B**

## Disassembly of ASSY\_OPTICAL\_ENG.



# Steps of disassembling

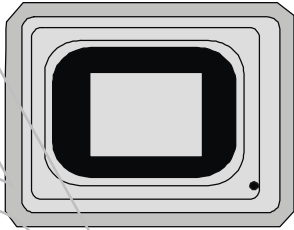
| Steps | Disassembling parts | Number of screws |
|-------|---------------------|------------------|
| ①     | ASSY_DOOR           | 1                |
| ②③    | ASSY_LAMP_MODULE    | 3                |
| ④⑤    | SUB_ASSY_FNT_BZL    | 2                |
| ⑥⑦⑧   | ASSY_UPPER_CASE     | 6                |
| ⑨⑩    | ASSY_HLD_FAN        | 3                |
| ⑪⑫    | HLD_LAMP_BOX        | 1                |
| ⑬⑭⑮   | POWER_BD            | 5                |
| ⑯⑰    | ASSY_EMI_SHD        | 3                |
| ⑱⑲    | DMD_BD              | 4                |
| ⑳㉑㉒   | BKT_AV_BD           | 4                |
| ㉓㉔    | MAIN_BD             | 7                |
| ㉕㉖    | ASSY_BKT_BLOWER     | 1                |
| ㉗㉘    | ASSY_LAMP_BOX       | 4                |
| ㉙㉚    | ASSY_HSG_CW         | 3                |
| ㉛㉜    | ASSY_OPTICAL_ENG.   | 4                |
| ㉝㉞    | HORN                | 1                |



## Appendix D DMD Chip

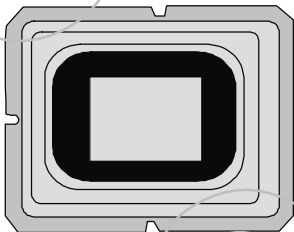
### 1. How To Define the XGA DMD chip and SVGA DMD chip

#### A. XGA



Feature: A black dot on the right-down side.

#### B. SVGA



Feature: Totally 3 concavity, each of them is on left side, upper side and lower side.

### 2. DMD Chip Installation Procedure

#### A. SVGA

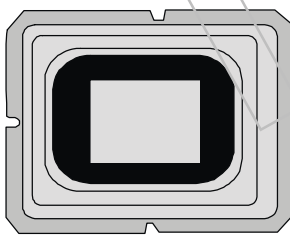


Fig. 1.1

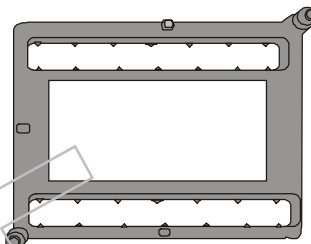


Fig. 1.2

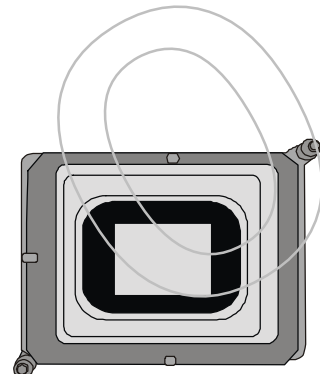


Fig. 1.3

Procedure:

1. Making sure you have SVGA chip on hand. (as shown on above Fig. 1.1)
2. Making sure the SVGA chip holder is for SVGA DMD. (as shown on above Fig. 1.2)
3. Attaching DMD chip into DMD chip holder tied. (as shown on above Fig. 1.3)

## B. XGA

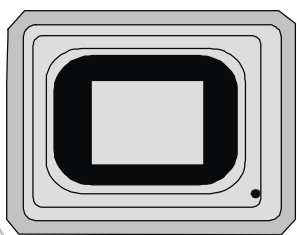


Fig. 2.1

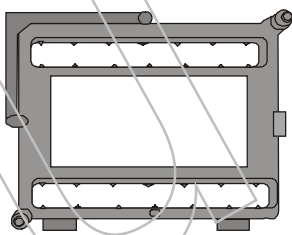


Fig. 2.2

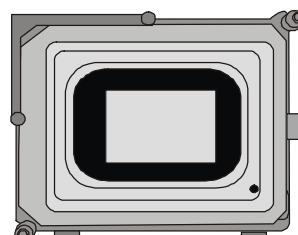
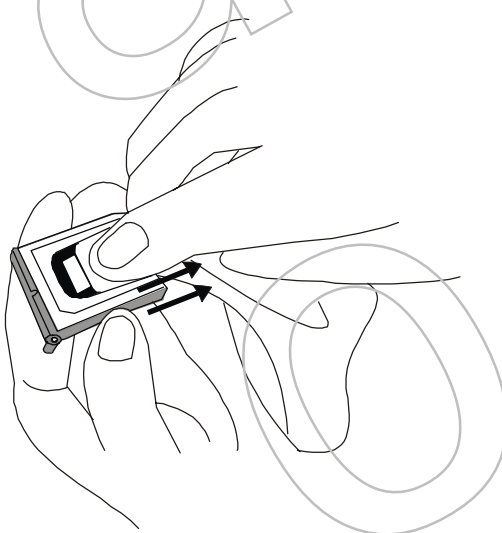
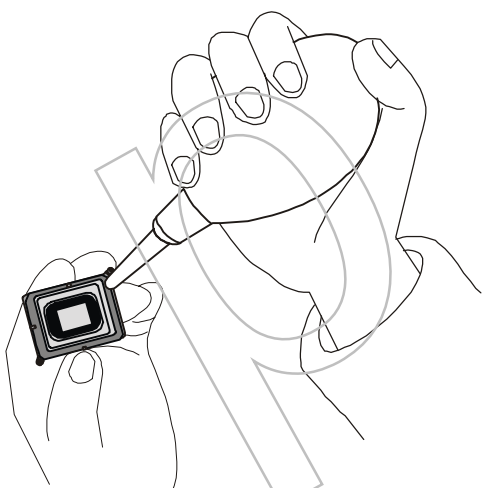


Fig. 2.3

### Procedure:

1. Making sure you have XGA chip on hand. (as shown on above Fig. 2.1)
2. Making sure the XGA chip holder is for XGA DMD. (as shown on above Fig. 2.2)
3. Attaching DMD chip into DMD chip holder tied. (as shown on above Fig. 2.3)

## 3. How to Clean the DMD chip



### A. Equipment

1. Clean gloves
2. Air blower
3. Acetone
4. Lens cleaning paper

### B. Procedure:

1. Wearing gloves
2. One hand holds the DMD chip, another hand holds air blower, blowing air on DMD chip surface at 60 degrees.
3. Dropping 1 or 2 drops of Acetone to DMD chip surface.
4. Cleaning the DMD surface with lens cleaning paper. The cleaning direction should from left to right.

## Appendix E Assistance Tool Chart

| SYMPTOM   | CHECK POINT   | ACTION  |
|---|---|---|
| Machine Auto Shut-off after Warming up  | <ol style="list-style-type: none"> <li>1. Checking the thermal sensor board &amp; Power Supply Module. (Checking procedure should refer to Trouble Shooting 7.1)</li> <li>2. Shooting 7.1)</li> </ol>   | <ol style="list-style-type: none"> <li>1. Replace the Lamp Module</li> <li>2. Replace DMD Board</li> </ol>  |
| Image Unclear   | <ol style="list-style-type: none"> <li>1. Checking the Zoom lens if dust on surface, clean the Zoom lens with clean cloth</li> </ol>  | <ol style="list-style-type: none"> <li>1. Replace the Zoom Lens</li> </ol>  |
| Machine is turned on but No Image Displayed (Standby indicator LED is "NOT ON") | <ol style="list-style-type: none"> <li>1. No image is displayed and the Standby indicator LED is not on, this condition should replace the Power Supply Module first, the replace the Ballast (checking procedure should refer to Trouble Shooting 7.1)</li> </ol>    | <ol style="list-style-type: none"> <li>1. Replace the Power Supply Module &amp; the Ballast.</li> </ol>   |
| Machine is turned on but No Image Displayed (Standby indicator LED is "ON")     | <ol style="list-style-type: none"> <li>1. No Image is displayed but Standby indicator LED is "On" should replace the Ballast &amp; Lamp together. (Checking procedure should refer to Trouble Shooting 7.1)</li> </ol>  | <ol style="list-style-type: none"> <li>1. Replace the Ballast &amp; Lamp</li> </ol>   |
| Machine can not be turned on (Standby indicator LED is "ON")                    | <ol style="list-style-type: none"> <li>1. No image is displayed and the Standby indicator LED is "Not On", this condition should replace the Power Supply Module first, then replace the Ballast (Checking procedure should refer to Trouble Shooting 7.1)</li> </ol> | <ol style="list-style-type: none"> <li>1. Replace Ballast, Lamp &amp; Power Supply Module</li> </ol>  |
| Machine can not be turned on (Standby indicator LED is "NOT ON")                | <ol style="list-style-type: none"> <li>1. No LED is On, so replace the Power Supply Module. (Checking procedure should refer to Trouble Shooting 7.1)</li> </ol>  | <ol style="list-style-type: none"> <li>1. Replace the Lamp Module</li> </ol>  |
| Lamp Explosion  | <ol style="list-style-type: none"> <li>1. Should open the lamp door and checking if the Lamp is explored.</li> </ol>  | <ol style="list-style-type: none"> <li>1. Replace the Lamp</li> </ol>   |
| Noise can be heard after machine is turned on                                   | <ol style="list-style-type: none"> <li>1. Checking if the color wheel is broken, replace the color wheel</li> <li>2. Checking if the DC 12V fan is worked? (Checking procedure should refer to trouble shooting 7.1)</li> </ol>                                       | <ol style="list-style-type: none"> <li>1. Replace Color wheel.</li> <li>2. Replace DC Fans</li> </ol>   |
| Blue, Yellow or Dark shadow is shown on the screen edge                         | <ol style="list-style-type: none"> <li>1. Open the Color wheel cover, the Light pipe inside of optical engine should be damaged or crashed.</li> </ol>  | <ol style="list-style-type: none"> <li>1. Replace the Optical Engine</li> </ol>   |
| Mouse can not be worked   | <ol style="list-style-type: none"> <li>1. Refer to trouble shooting 7.3</li> </ol>  | <ol style="list-style-type: none"> <li>1. Replace the Main Board</li> </ol>   |
| Displayed Image Abnormal  | <ol style="list-style-type: none"> <li>1. Entry factory OSD</li> <li>2. Checking if the Gamma Index Value is correct.</li> </ol>  | <ol style="list-style-type: none"> <li>1. If the Gamma Index value if wrong, reset the Gamma Index Value. (refer to Factory Default Value table)</li> </ol> |

## Appendix F Factory Default Value

| Layer                |                | Default Value                |
|----------------------|----------------|------------------------------|
| <b>1.DMD layer</b>   | CW delay       | depend on factory adjustment |
|                      | White peak     | 10                           |
|                      | DLP Brightness | 32                           |
|                      | DLP Contrast   | 36                           |
|                      | Burn-In Hour   | 48                           |
|                      | Burn-In        | N/A                          |
| <b>2.ADC layer</b>   | ADC Brightness | ADC calibration Black        |
|                      | ADC Contrast   | ADC calibration White        |
|                      | ADC Offset RGB | depend on factory adjustment |
|                      | ADC Gain RGB   | depend on factory adjustment |
|                      | Fac Brightness | 0                            |
|                      | Fac Contrast   | 0                            |
| <b>3.Color Layer</b> | PIP Enable     | N/A                          |
|                      | PIP Source     | N/A                          |
|                      | PIP Size       | N/A                          |
|                      | Video Red      | 128                          |
|                      | Video Green    | 128                          |
|                      | Video Blue     | 128                          |
| <b>4.Optic Layer</b> | Test Pattern1  | N/A                          |
|                      | Test Pattern2  | N/A                          |
|                      | SpokeLit       | N/A                          |
|                      | Curtain Red    | N/A                          |
|                      | Curtain Green  | N/A                          |
|                      | Curtain Blue   | N/A                          |
| <b>5.Lamp layer</b>  | Gamma Index    | N/A                          |
|                      | Filter         | N/A                          |
|                      | Lamp Hour      | 0                            |
|                      | Usage Hour     | 0                            |
|                      | Data Reset     | N/A                          |
| <b>6.YPbPr layer</b> | PbPr Offset1   | depend on factory adjustment |
|                      | PbPr Offset2   | depend on factory adjustment |
|                      | Audio atten    | 12                           |
|                      | Gray value     | N/A                          |
|                      | Blue value     | N/A                          |
|                      | Scaling        | N/A                          |